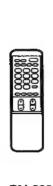
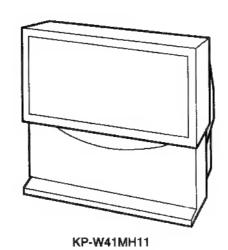
SERVICE MANUAL

RX1 chassis

MODEL	COMMANDE	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KP-W41MH11	RM-89 0	ME	SCC-J64A-A				
KP-W41MH11	RM-890	нк	SCC-J63A-A				
KP-W41MN11	RM-890	GE	SCC-J65A-A				
KP-W41SN11	RM-890	AUS	SCC-J87A-A				
				1			











SPECIFICATIONS

Projection system

3 picture tubes, 3 lenses, horizontal in-

line system

Picture tube

7 inch high-brightness monochrome tubes (6.3 raster size), with optical coupling and liquidcooling system

Projection lenses High performance, large-diameter

hybrid lens F1.0

Screen size **Television system**

41 inches

Color system

B/G, I, D/K, M PAL, PAL 60, SECAM, NTSC4.43,

NTSC3.58

Channel coverage

See "Channel coverage" at the bottom

Antenna

75 ohm external antenna terminal

Audio output (Speaker)

15 W × 2

Number of terminals

Video **Audio** Input: 4, Output: 1 Input: 4, Output: 1

S1 Video/S Video

Input: 4, Output: 1

Y: 1 Vp-p, 75 ohms, unbalanced, sync

negative,

C: 0.286 Vp-p, 75 ohms

Power requirement

110 - 120/220 - 240 V AC, 50/60 Hz

Power consumption

280 W

Dimensions (w/h/d)

1020 × 1115 × 390 mm

Mass

Approx. 58 kg

Supplied accessories

Remote commander (1) Size R6 (AA) battery (1)

Bracket (2) Screw (2)

Optional accessory

AV rack SU-W41

Design and specifications are subject to change without notice. AMERICA/CATV AMERICA

Channel coverage

M E/ASIA/CATV W EURO

Receivable channel	Channel display
E-2 to E-12	C02 to C12
E-21 to E-69	C21 to C69
S-01 to S-03	S42 to S44
S-1 to S-41	S01 to S41
Indonesia	
1A	C01
2 to 11	C03 to C12
Morocco	
M-4 to M-7	C70 to C73
M-8 to M-10	C08 to C10
New Zealand	
1	C01
2 to 11	C03 to C12
27 to 62	C27 to C62

HK/UK

Receivable channel	Channel display
Hong Kong, United	Kingdom
B-21 to B-68	C21 to C68
Ireland	
A to J	C01 to C09
South Africa	
4 to 13	C04 to C13
21 to 68	C21 to C68

AUSTRALIA

Receivable channel	Channel display
Australia	
AS-0 to AS-12	C00 to C12
AS-5A, AS-9A	C13, C14
AS-28 to AS-69	C28 to C69
New Zealand	
1	C00
2 to 3	C01 to C02
4 to 7	C06 to C09
8	C14
9 to 11	C10 to C12

CHINA/E EURO

Channel display
C01 to C02
C13
C03
C04
C14
C06 to C11
C21 to C32
C38 to C60
C61 to C70
S01 to S39
C01 to C12
C21 to C60

Receivable channel	Channel display
2 to 79	C02 to C79
A-1	S99
A-2	S98
A-3	S97
A-4	S96
A-5	S95
A-6	S06
A-7	S05
A-8	S01
A to W	514 to S36
AA to CCC	S37 to S65

JAPAN

Receivable channel	Channel display
J-1 to J-62	C01 to C62
C-13 to C-32	C80 to C99

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(CAUTION)

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SER-VICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHAS-SIS

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK & ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESECOMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFEOPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

(ATTENTION)

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURTCIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE DELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DEPANNAGE.

LE CHÁSSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE & SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNEIMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAU-VAIS FONCTIONNEMENT EST SUSPECTÉ.

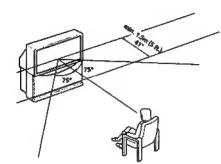
SECTION1 **GENERAL**

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

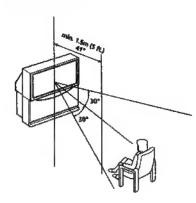
Installing the projection TV

For the best picture quality, install the projection TV within the areas shown below.

Optimum viewing area (Horizontal)



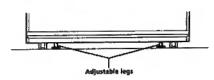
Optimum viewing area (Vertical)



Stabilizing the projection TV

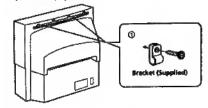
The projection TV should be installed as level as possible, for safety purposes. After setting up, adjust the two adjustable legs located at the bottom, and secure the projection TV to a wall, etc., with the supplied brackets.

1 Turn the two adjustable legs located at the bottom to the left until they touch the floor. This will stabilize the projection TV.



2 ① Mount the two supplied brackets with the screws to the upper rear side of the projection TV.

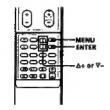
(Rear of the projection TV)



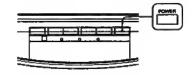
2 Pass a strong cord or a chain through each bracket mounted in ①, and then secure to a wall or a pillar, etc.

Changing the menu language

If you prefer Chinese to English, you can change the menu language. You can use the buttons on both the remote commander and the projection TV.



1 Press POWER on the projection TV.



2 Press MENU.



PVIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET DEMO

3 Press △ + or ∀ - to move the cursor (►) to LANGUAGE.



VIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES LANGUAGE

4 Press ENTER.



LANGUAGE > ENGLISH CHINESE/中文

5 Press △ + or ∇ - to select CHINESE.



LANGUAGE⇒ ENGLI\$M ►CHINESE/中京

6 Press ENTER.



语音 英文/ENGL I SH 中文

7 Press MENU to return to the normal screen.



Adjusting the convergence (CONVERGENCE)

Before you use the projection TV, adjust convergence. The projection tube image appears on the screen in three layers (red, green and blue). If they do not converge, the color is poor and the picture blurs. To correct this, adjust convergence.

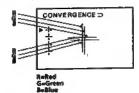
After 20-30 minutes of turning on the power, adjust convergence.

1 Press MENU.

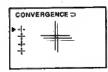
Ç

- 2 Press △+ or ∇- to move the cursor (>) to FEATURES and press ENTER.
- 3 Press △+ or ∇- to move the cursor (>) to CONVERGENCE and press ENTER.

The CONVERGENCE adjustment screen appears.

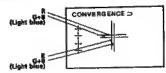


4 Press △+ or ▽- to move the cursor (▶) to the symbol showing the line you want to adjust, and press ENTER.



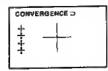
- +: Red vertical line (left/right adjustment)
- +: Red horizontal line (up/down adjustment)
- +: Blue vertical line (left/right adjustment)
- +: Blue horizontal line (up/down adjustment)

5 Press △+ or ∇ - to move the line until it converges with the center green line, and press ENTER.



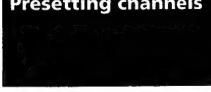
To move up/right, press $\Delta +$. To move down/left, press V -.

Repeat step 4 and 5 to adjust the other lines until all three lines converge and are seen as a white cross.



7 Press MENU to return to the normal screen.

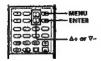
Presetting channels



You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or skip program positions (page 23). You can preset channels using the buttons on the projection TV as well as those on the remote commander.

Presetting channels automatically

You can preset up to 100 TV channels in numerical sequence from program position 1.



1 Press MENU.



VIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET LANGUAGE DEMO

2 Press △ + or ∇ – to move the cursor (>) to



VIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET DEMO

3 Press ENTER.



PRESET PROGREMANUAL PROGR

4 Press △ + or ♥ - to select AUTO PROGR.



PRESET > AUTO PROGR MANUAL PROGR

5 Press ENTER.



AUTO PROGRE M E/ASIA/CATY W EURO AUSTRALIA MK/UK CHINA/E EURO AMERICA/CATY AMERICA

Press △ + or ∇ - to select your area (channel system).

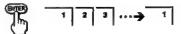
For the areas allocated in each channel system, see "Channel allocation" on page 28.



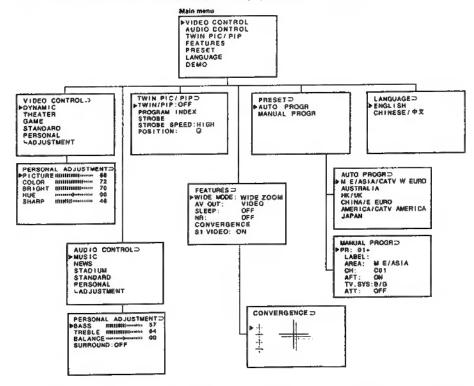
AUTO PROGRID M E/ASIA/CATY W EURO CHINA/E EURO AMERICA/CATV AMERICA JAPAN

7 Press ENTER.

Presetting starts from program 1.



You can preset channels and set the wide mode, picture quality, sound, and other settings using the on-screen menus. You can use the buttons on both remote commander and the projection TV to operate the menus.



Getting back to the previous menu

Press $\triangle + \operatorname{gr} \nabla - \operatorname{to}$ move the cursor (>) to the first line (\supset) of each menu (except for the main menu), and press ENTER.

Cancelling the menu screen

Press MENU.

Notes

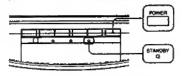
- If more than 60 seconds elapse after you press a button, the menu screen disappears automatically.
 DEMO in the main menu briefly introduces the main features
- DEMO in the main menu briefly introduces the main features available for the projection TV. Press any button on the remote commander to stop this function.

Watching the TV

1 Select the TV program you want to watch.

Press the number buttons or PROGR +/-. The projection TV turns on automatically and the selected program appears.

When the STANDBY indicator on the front of the projection TV is not lit, press POWER on the projection TV, and select the program position.



To select a program position directly

Press the number buttons.



To select a two-digit program position, press "-+-" before the number buttons.

For example, to select program position 25, press "-y-" and then "2" and "5."



To scan through program positions

Press PROGR +/- until the program position you want appears.



To select a channel directly

Press C (once for VHF/UHF channels, twice for cable TV channels), then press the number buttons (two-digit number for VHF/UHF channels, three-digit number for cable TV channels). For example, to select the VHF/UHF channel 4, press C, 0 then 4

2 Press VOL +/- to adjust the volume.



Switching off the projection TV

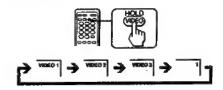
To switch off the projection TV temporarily, press POWER on the remote commander. The STANDBY indicator lights.



To switch off the projection TV completely, press POWER on the TV.

Watching the video input

Press VIDEO/HOLD.

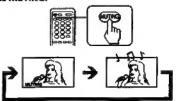


To watch projection TV, press TV, the number buttons or PROGR +/-.



Muting the sound

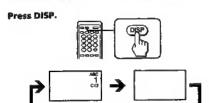
Press MUTING.



Operations | 11-EN

6

Displaying on-screen information



Note

· When you press DISP, the on-screen display shows the picture, sound and wide mode settings as well, all of which disappear after three seconds.

Freezing the Picture

Press FREEZE.

The screen will become TWIN PICTURE, and the freezed picture will appear on the right screen.

Setting the Sleep Timer

You can set the projection TV to turn off automatically after the period of time you set.

- 1 Press MENU.
- 2 Press △ + or ▽ to move the cursor (►) to FEATURES, and press ENTER.
- 3 Press △ + or ▽ to move the cursor (>) to SLEEP, and press ENVER.
- 4 Press △ + or ∇ until the time (in minutes) you want appears.



5 Press ENTER.

To cancel the Sleep Timer, select OFF, or turn the projection TV off.

12-EN | Operations

Watching the picture in wide mode

You can enjoy a variety of wide-mode pictures. The projection TV's WIDE MODE factory preset is WIDE ZOOM. The WIDE MODE is retained in the memory after the power is turned off. You can also manually set the WIDE MODE in the FEATURES menu.

Using the AUTO WIDE function

When you set the TV picture mode on AUTO WIDE, the projection TV will automatically choose the wide picture mode (WIDE 200M/ZOOM/SUBTITLE) that is most suitable for the program you are watching.

Press AUTO WIDE.



Notes on AUTO WIDE

- . Depending on the picture sources, the AUTO WIDE function may not stick to one mode. It may differ. In this case, select your desired wide mode using the WIDE button.
- . The AUTO WIDE function is not available for SECAM color

Using the WIDE function

You can preview all wide-mode pictures and set the desired mode by pressing the WIDE button on your remote commander.

Press WIDE until the mode you want appears on the screen.



 AUTO WIDE → WIDE ZOOM → ZOOM FULL --- NORMAL --- SUBTITLE -

WIDE ZOOM

This mode is ideal when viewing a movie or sports programs.

Conventional picture (NORMAL mode)



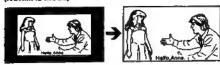
WIDE ZOOM

ZOOM

This mode is best for viewing a movie with black bands

Conventional picture (NORMAL mode)





SUBTITLE

This mode is most suitable when watching movies with subtitles.

Conventional picture (NORMAL mode)



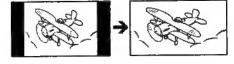


Viewing a picture in FULL mode

When you are watching a video game screen with dynamic effect or watching an 51 Video picture, use FULL mode.

Conventional picture (NORMAL mode)





Scrolling the picture up or down

If subtitles are lost in subtitle mode, you can scroll the picture up or down to view them. The picture scrolls up or down within the range of -5 to +5. You can also use the scroll function in widezoom and zoom modes. Using the scroll function in widezoom mode changes the vertical size of the picture.

1 Press SCROLL.



2 Press △ + or ▽ - to adjust the position of the



Note

 If you display the PIP screen in zoom mode or scroll the picture with the PIP screen in zoom mode or subtitle mode, the PIP screen may be lost. However, this does not indicate a malfunction.

Selecting the desired WIDE MODE from the menu

When AUTO WIDE is set, the projection TV automatically picks the best mode. You can use the FEATURES menu to select another mode.

- 1 Press MENU.
- 2 Press △ + or ∇ to move the cursor (►) to FEATURES, and press ENTER.

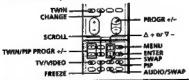
FEATURES = AV OUT: VIDE ZOOM SLEEP: CONVERGENCE SI VIDEO: ON

- 3 Press △ + or ▽ to move the cursor (►) to WIDE MODE, and press ENTER.
- 4 Press △ + or ∇ to select the desired mode, and press ENTER.

To see the different wide picture modes, refer to page 12 and 13.

Watching two programs at one time-TWIN PICTURE and PIP

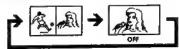
You can display a left and right TWIN PICTURE screens or display a Picture-in-Picture (PIP) sub screen within the main picture.



Displaying TWIN PICTURE

You can display two screen pictures side by side using the TWIN/PIP menu and/or the TWIN button on the remote commander.

Press TWIN.



Selecting a TV program or video input in the right TWIN PICTURE screen

To select a TV program, press TWIN/PIP PROGR +/-button.

To select a video input, press TV/VIDEO.

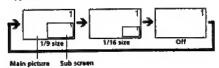
Notes

- You cannot select the same channel on the right and left screens.
- When a fast-moving picture is displayed in the right TWIN PICTURE screen, the picture may look unnatural. This is not a mailunction. To correct, press CI IANGE to switch the right and left TWIN PICTURE screens.

Displaying PIP

You can display PIP by using the TWIN/PIP menu and/or the PIP button on the remote commander.

Press PIP.



Selecting a TV program or video input in the PIP screen

To select a TV program, press TWIN/PIP PROGR +/button.

To select a video input, press TV/VIDEO.

Freezing TWIN PICTURE and the PIP screen

Press FREEZE.

The PIP sub screen or right TWIN PICTURE screen will freeze.





To restore the normal picture, press FREEZE again.

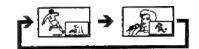
Changing the left and right TWIN PICTURE screens

Press CHANGE.



Swapping pictures between the main and PIP screens

Press SWAP.



Swapping the sound between TWIN PICTURE's right and left screens or PIP's main and sub screens

Press AUDIO SWAP.

The "." display will appear indicating which TWIN PICTURE's sound is being received.

Changing the position of the PIP screen

1 Press MENU.

PVIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET LANGUAGE DEMO

2 Press △ + or ∇ - to move the cursor (>) to TWIN PIC/PIP, and press ENTER.

> TWIN PIC/FIPD TWIN/PIP:OFF PROGRAM INDEX STROSE STROSE SPEED:HIGH POSITION: Q

- 3 Press △ + or ▽ to move the cursor (>) to POSITION, and press ENTER.
- 4 Press △ + or ∇ to select the position you want.

Pressing Δ + changes the position as shown below. Pressing ∇ - changes the position in reverse order.



Selecting TWIN PICTURE or PIP from the menu

Follow these directions to select PIP and TWIN PICTURE from the TWIN PIC/PIP menu.

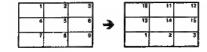
- 1 Press MENU.
- 2 Press △ + or ∇ ~ to move the cursor (►) to TWIN PIC/PIP, and press ENTER.
- 3 Press ∆ + or ∇ to move the cursor (►) to TWIN/PIP, and press ENTER.
- 4 Press △ + or ∇ to select TWIN, PIP 1 or PIP 2, and press ENTER.

To view a sample of the TWIN PICTURE and PIP screens, see "Displaying PIP" and "Displaying TWIN PICTURE" sections.

Checking all the preset programs (Program Index)

Press INDEX.

The nine preset programs appear in the separated screen in sequence, switching the picture for each second. The sound is muted. Then next nine sequential programs appear. After all the preset programs are displayed, the programs switch the picture with the sound for each five seconds. Pressing PROGR + also switches to the next nine programs.



To restore the normal picture

Press the number buttons which you want to watch (e.g., for program 25, press +-, 2 and 5). Pressing INDEX also restores the normal picture.

Notes

- You can also display nine sequential TV programs using the menu. Select PROGRAM INDEX from the TWIN PIC/PIP menu, then press ENTER.
- If you display different TV systems in the Program Index screen, the size of the separated screens may be different.
- You can not use TWIN PICTURE while PROGRAM INDEX is selected.

Displaying frame-by-frame pictures (Strobe)

- 1 Press MENU.
- 2 Press △ + or V to move the cursor (>) to TWIN PIC/PIP, and press ENTER.
- 3 Press △ + or ▽ to move the cursor (>) to STROBE, and press ENTER.



To select the strobe speed

Select STROBE SPEED from the TWIN PIC/PIP menu, and press ENTER. Then select HIGH (3 seconds), MIDDLE (7 seconds) or LOW (12 seconds) with A + or V -, and press ENTER.

To restore the normal picture

Select STROBE from the TWIN PIC/PIP menu again, and press ENTER.

You can also restore the normal picture with TV, VIDEO, PROGR +/-, POWER or Wide mode buttons.

9

- You can hear the normal sound when using the strobe feature.
- · You can not watch TWIN PICTURE when STROBE is selected.

Motes on TWIN PICTURE features

- . If you display different color systems in the right and left screens, the size of screen may be different.
- . The sound from the right screen is monaural.

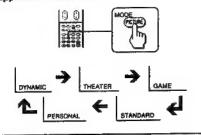
Notes on PIP features

- · When you display a VCR picture in the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- · If you display different color systems in the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy. This is not caused by the malfunction of the TV.

Selecting the picture mode

You can select the picture mode using the menu as well as the PICTURE MODE button on the remote commander. Select VIDEO CONTROL from the main menu, then select the desired mode.

Press PICTURE MODE until the mode you want appears on the screen.



Select	To
DYNAMIC	Display more contrast picture
THEATER	Display darker and finely detailed picture suitable for movies
GAME	Display softer picture suitable for the video games
STANDARD	Display normal contrast picture
PERSONAL	Display the picture that is adjusted using ADJUSTMENT in the VIDEO CONTROL menu

Viewing a video game screen

Press PICTURE MODE until the GAME mode appears on the screen.

The screen changes to the optimum mode for video games with soft picture. The WIDE MODE is automatically set on FULL mode.

If the fixed (non-moving) pattern is on the screen for long periods of time

Keep the picture functions at low settings (see "Adjusting the picture setting" on page 17). If not, the image may be permanently imprinted on the screen.

Note

. To prevent imprints on the screen, the picture shifts horizontally about 5 mm every 30 minutes in the GAME mode. This is not a malfunction of the TV.

Adjusting the picture setting (ADJUSTMENT)

You can adjust the picture quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.



1 Press MENU.

PVIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET

2 Press △ + or ▽ - to move the cursor (>) to VIDEO CONTROL, and press ENTER.

> VIDEO CONTROLS POYNAMIC THEATER GAME STANDARD PERSONAL -ADJUSTMENT

3 Press △ + or ▽ - to move the cursor (>) to ADJUSTMENT, and press ENTER.

	MITSULGA AF	88
COLOR	ORSE CONTROL OF THE PARTY OF TH	72
BRIGHT	******	74
PHUE		96
SHARP	ALIE LEGISLATION OF THE PERSONS	44

- 4 Press △ + or ▽ to move the cursor (>) to the item you want to adjust, and press
- 5 Press △ + or ▽ to adjust the item, and press ENTER.

Stem	Press △ + to	Press ∇ - to	
PICTURE	Increase picture contrast	Decrease picture contrast	
COLOR	Increase color intensity	Decrease color intensity	
BRIGHT	Brighten the picture	Darken the picture	
HUE	Make skin tones become greenish	Make skin tones become reddish	
SHARP	Sharpen the picture	Soften the picture	

- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

You can adjust HUE for NTSC color system only.

Reducing the noise of the picture (NR)

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a video tape that is in poor condition.

- 1 Press MENU.
- 2 Press △ + or ∇ to select FEATURES, and press ENTER.

FEATURES	•
-WIDE MODE:	WIDE ZOOM
AV OUT:	VIDEO
SLEEP:	OFF
NP :	OFF
CONVERGE	
81 VIDEO: 0	DN

- 3 Press △ + or ∇ to select NR, and press
- 4 Press △ + or ▽ to select ON, and press

To turn the noise reduction off, select OFF and press ENTER.

If the color of the picture is abnormal when receiving programs through the 1/ (antenna) terminal

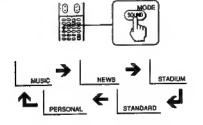
Press COLOR SYSTEM on the projection TV or change the TV system setting from the menu as described below until the color becomes normal.

- 1 Press MENU.
- 2 Press △ + or ∇ -- to move the cursor (>) to PRESET, and press ENTER.
- 3 Press △ + or ∇ to move the cursor (►) to MANUAL PROGR, and press ENTER.
- 4 Press △ + or ▽ -- to move the cursor (>) to TV SYS, and press ENTER.
- 5 Press △ + or ∇ to change the TV system until the color becomes normal.

Normally set COLOR SYSTEM to AUTO.

You can select the sound mode using the menu as well as the SOUND MODE button on the remote commander. Select AUDIO CONTROL from the main menu, then select the desired mode.

Press SOUND MODE until the mode you want appears on the screen.



Select	То
MUSIC	Listen to music programs. It gives sound with a live concert effect.
NEWS	Listen to news program. A person's voice can be heard clearly.
STADIUM	Listen to sports program. If gives sound with a sports stadium effect.
STANDARD	Listen to sound other than music, news or sports program.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT in the AUDIO CONTROL menu.

Adjusting the sound setting (ADJUSTMENT)

You can adjust the sound quality to suit your taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.



1 Press MENU.

PVIDEO CONTROL AUDIO CONTROL TWIN PIC/PIP FEATURES PRESET LANGUAGE DEMO

2 Press △ + or ∇ - to move the cursor (►) to AUDIO CONTROL, and press ENTER.

AUDIO CONTROLD
MUSIC
NEWS
STADHUM
STANDARD
PERSONAL
ADJUSTMENT

3 Press ∆ + or ∇ - to move the cursor (►) to ADJUSTMENT, and press ENTER.

PBASS	MTSULGA J	57
	[]#fffffffffff	84
BALANCE	Inches de l'accessor	ΩĢ
SURROUN	D:OFF	

- 4 Press △ + or ▽ to move the cursor (▷) to the item you want to adjust, and press ENTER.
- 5 Press △ + or ∇ to adjust the item, and press ENTER.

Ptom	Press △ + to	Press ∇ – to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

Listening to surround sound

You can enjoy a surround sound effect that is like being in a movie theater or a concert hall when receiving stereo signals.

- 1 Press MENU.
- 2 Press △ + or ▽ to move the cursor (►) to AUDIO CONTROL, and press ENTER.
- 3 Press △ + or ∇ to move the cursor (>) to ADJUSTMENT, and press ENTER.

PERSONAL ADJUSTMENT 37
>0.65 MUMBHING 57
TRE01: MIMBHING 6
BALANCE COMPANIE 00
SURROUND: OFF

- 4 Press △ + or ∇ to move the cursor (>) to SURROUND, and press ENTER.
- 5 Press ∆ + or ∇ to select ON, and press ENTER.

If the sound is distorted or noisy when receiving programs through the IF (antenna) terminal

Press COLOR SYSTEM on the projection TV or change the TV system setting as follows until the sound becomes clear.

- 1 Press MENU.
- 2 Press ∆ + or ∇ to move the cursor (►) to PRESET, and press ENTER.
- 3 Press △ + or ▽ to move the cursor (►) to MANUAL PROGR, and press ENTER.
- 4 Press △ + or ▽ to move the cursor (>) to TV SYS, and press ENTER.
- 5 Press △ + or ∇ to change the TV system until the sound becomes clear.

Note

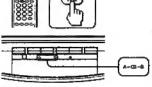
Normally set COLOR SYSTEM to AUTO.

Selecting a stereo or bilingual program

You can enjoy stereo sound or bilingual program of NICAM and A2 (German) stereo systems. The initial setting is stereo sound.

Press A/B/ENLARGE repeatedly until you receive the sound you want.

The sound changes and the corresponding indicator lights up as follows:



When receiving a NICAM program:

Broadcasting	On-screen Display	Selected sound (Indicator lit)
NICAM stereo	NICAM	→ Stereo → Regular (A and B)
NICAM bilingual	NICAM	$A \rightarrow B \rightarrow \text{Regular-}$ (A) (B)
NICAM menaural	NICAM	→ NICAM menaural-

When receiving an A2 (German) stereo program:

Broadcasting	On-screen display	Selected sound (Indicator lit)
A2 (Cerman) stereo	STEREO	→ Steren → Monaural (A and B)
A2 (German) bilingual	_	A → B — — — — — — — — — — — — — — — — — —

Receiving area for NICAM and A2 (German) stereo programs

System	Receiving area
NICAM	Hong Kong, Singapore, New Zealand, etc.
A2 (German) stereo	Australia, Malaysia, Thailand, etc.

lotes

- If the signal is very weak, the sound becomes monaural.
- If the stereo sound is noisy, select "regular" or "mono."

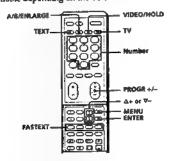
 The sound becomes monaural, however, the noise will be reduced.

 Operations | 19-EN



TV stations broadcast an information service called Teletext via a local TV channel.

Teletext service allows you merceive various information such as weather forecasts or news at any time. Some of the features, however, may not be available depending on the Teletext service.



Displaying Teletext

- 1 Select a TV channel which carries the Teletext broadcast you want to watch.
- 2 Press TEXT to display the Teletext. A Teletext page (normally the index page) is displayed on the left. If there is no Teletext broadcast, P100 appears in the top left corner of the

To switch Teletext off, press TV.

Superimposing a Teletext page on the TV picture

Press TEXT.

Each time you press TEXT, the screen changes as follows:

→ Teletext → Teletext and TV → TV —

20-EN | Operations

Checking the contents of a Teletext service (INDEX)

When Teletext is switched on, you can display the Teletext menu.

Press MENU.

TEXT CLEAR
SUBTITLES
REVEAL :OFF
TIME PAGE
SUBPAGE

2 Press ■ + or ∇ - to move the cursor (►) to INDEX, and press ENTER.

Selecting a Teletext page

Press the number buttons to enter the threedigit page number of the Teletext number you want.

If you make a mistake, re-enter the correct page number.

To access the next or previous page, press PROGR +/-.

Note

When you request another Teletext page while viewing one
Teletext page, the page scrolling may pause on a different page
depending on the Teletext service, but the search will continue
till the requested page is displayed.

Preventing a Teletext page from being updated (HOLD)

A Teletext page may consist of several subpages. You can stop the page scrolling in order to read the text at your own pace.

Press VIDEO/HOLD.

HOLD appears in the top left corner of the screen.

To resume normal Teletext operation, press TEXT.

Using FASTEXT

This feature allows you to quickly access a Teletext page that uses FASTEXT. When a FASTEXT page is broadcast, a color-coded menu appears at the bottom of the screen. The colors of the menu correspond to the red (TV/VIDEO), green (FREEZE), yellow (SWAP) and blue (PIP) buttons on the remote commander. These colored buttons function as the FASTEXT buttons in Teletext mode.

Press the colored button which corresponds to the color-coded menu.

The page is displayed after a few seconds.

Enlarging the Teletext display (ENLARGE)

Each time you press A/B/ENLARGE, the Teletext display changes as follows:

-Enlarge upper half-Enlarge lower half-Normal size-

Revealing concealed information (REVEAL)

Sometimes pages contain concealed information, such as answers to a quiz. The reveal option discloses the information.

- 1 Press MENU.
- 2 Press △ + or ♥ to move the cursor (►) to REVEAL, and press ENTER.
- 3 Press △ + or ∇ to select ON, and press ENTER.

To conceal the information again, select OFF.

Watching a TV program while waiting for a requested Teletext page (TEXT CLEAR)

- 1 Select the Teletaxt page to which you want to refer.
- 2 Press MENU.
- 3 Press △ + or ∇ to move the cursor (>) to TEXT CLEAR, and press ENTER.
- 4 When the page number is displayed on the screen, press TEXT to switch the Teletext on.

To restore the normal Teletext reception, press TEXT.

Displaying subtitles (SUBTITLES)

Your Teletext service informs you if a TV program is subtitled.

- 1 Press MENU.
- 2 Press △ + or ▽ to move the cursor (►) to SUBTITLES, and press ENTER.

Note

 If the subtitles are not broadcast on page 888, select the subtitle page using the number buttons.

Displaying a Teletext page at the requested time (TIME PAGE)

You can display a time-coded page (e.g. an alarm page) at the time you preset.

- 1 Press MENU.
- 2 Press △ + or ¥ to move the cursor (>) to TIME PAGE, and press ENTER.
- 3 Press the number buttons to enter four digits for the desired time. For example, to enter 7:30, press 0,7,3 and 0.



At the requested time, the page appears on the screen.

To restore the normal Teletext reception, press TEXT.

Displaying a particular page among several subpages (SUBPAGE)

- 1 Press MENU.
- 2 Press △ + or ∀ to move the cursor (►) to SUBPAGE, and press ENTER.
- 3 Press the number buttons or PROGR +/- to enter four digits for the desired subpage. For example, to display the second page of a sequence, press 0, 0, 0 and 2.

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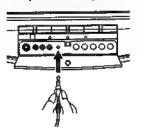


You can use headphones to enjoy the sound of the TV. This feature also allows you menjoy the sound of PIP and TWIN PICTURE screens.

Listening to the sound of the projection TV with headphones

Insert the headphones into the Ω (headphones) lack located on the front panel of the projection TV.

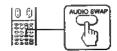
The sound from the speaker is shut off. To adjust the headphones volume, press VOL +/-.



Setting the output of your headphones

When using TWIN PICTURE and PIP, you will have to select the output of your headphones. For example, with TWIN PICTURE, you can select right and left picture sound. Whereas with PIP, you can select main or sub picture sound.

Press AUDIO SWAP.





Using the AV OUT (advance rec-out) terminal

You can select the output signal from the VIDEO jacks at the rear of the projection TV.

The S Video output can be used only when VIDEO is selected. However, 🗏 cannot be used 📓 Program Index or Strobe mode even though VIDEO is selected.

- 1 Press MENU.
- 2 Press △ + or ▽ to select FEATURES, and press ENTER.

- 3 Press △ + or ▽ to select AV OUT, and press
- 4 Press △ + or ▽ to select the output signal, and press ENTER.

Select	To
TV	Output the TV signal.
VIDEO	Output the signal of the picture you are watching as a main picture. (For TWIN PICTURE, a left picture will be output.)

Selecting a TV program output from VIDEO/TV OUT lacks while using the PIP feature

When watching a TV program in the main screen, use PROGR +/--

. Do not change the channel or use AUDIO SWAP while recording with a VCR through the VIDEO/TV OUT jacks. If you change the channel, it also changes the channel you are recording.

Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.

For example, preset a channel in program position 8.

- 1 Press MENU.
- 2 Press A + or ∇ to move the cursor (►) to PRESET, and press ENTER.

PRESET D AUTO PROGR MANUAL PROGR

3 Press △ + or ∇ - to select MANUAL PROGR, and press ENTER.

> MANUAL PROGRO M E/ASIA AREA: CH: COT TV.8YS:8/Q ATT:

- 4 Select the program position to which you want to preset a channel.
 - (1) Press ∆ + or ∇ to select PR, and press ENTER.
 - (2) Press △ + or ∇ to select III You can also select the program position with PROGR +/- or the number buttons (e.g. for program 24, press ---, 2 and 4).
 - Press ENTER.
- 5 Select your area (channel system).

For the areas allocated III each channel system, see "Channel allocation" on page 28.

- (1) Press △ + or V to select AREA, and press ENTER.
- (2) Press △ + or ∇ to select your area, and press
- 5 Select a channel which you want to preset.
 - (1) Press Δ + or ∇ to select CH, and press ENTER.
 - (2) Press Δ + or ∇ until the channel you want appears on the screen. You can also select the channel directly using the number buttons. Press C (once for VHF/ UHF channels, twice for cable TV channels). then the number buttons (e.g., for channel 5, press 0 and 5).
 - (3) Press ENTER.

To preset other channels Repeat steps 4 to 6.

Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR

For example, disable program position III

- 1 Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on this page.)
- 2 Press △ + or ▼ to move the cursor (►) to PR. and press ENTER.
- 3 Press PROGR + or until 8 appears.
- 4 Press △ + or ∇ to select "-", and press

To skip other program positions, repeat steps 3 and

To restore the skipped program positions In step 4 above, press Δ + or ∇ - to select "+," and press ENTER.

- 1 Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on this page.)
- 2 Press △ + or ▽ to move the cursor (►) to PR, and press ENTER.
- 3 Press △ + or 〒 to select the program position you want to caption and press ENTER.
- 4 Press △ + or ▽ to move the cursor (>) to LABEL, and press ENTER.
- 5 Press △ + or ∇ to select a letter or number, and press ENTER for each caption space (up to five.)

Each time you press △ + or ♥ -, the letter (mumber) changes as shown below.

A-B-...-Z-0--1-...-9----:--/--.--← (space)

For the caption space you want to leave blank, select "-."

6 Repeat steps 2 to 5 to caption other channels.

To erase a caption

In step 5 above, select "_ (space)."

Manual fine-tuning

Normally, the automatic fine-tuning (AFT) is operating. However, if the picture of a channel is distorted, you can use the manual fine-tuning function for the channel to obtain better picture reception.

- 1 Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 23.)
- 2 Press △ + or ∇ to move the cursor (>) to PR, and press ENTER.
- 3 Press △ + or ∇ to select the program position corresponding to the channel which you want to manually fine-tune, and press ENTER.
- 4 Press \triangle + or ∇ to move the cursor (>) to AFT, and press ENTER.
- 5 Press △ + or ∇ to select OFF, and press
- 6 Press △ + or ♥ to fine-tune the channel so that you get the best TV reception. As you press these buttons, the frequency changes from -128 to +128.
- 7 After fine-tuning, press ENTER. The fine-tuned level is stored.

Improving TV signal

If the reception signal is very strong, you can attenuate it to obtain better picture reception.

- 1 Display the MANUAL PROGR menu. (Follow steps 1 to 3 in "Presetting channels manually" on page 23.)
- 2 Press △ + or ∇ to move the cursor (>) to PR, and press ENTER.
- 3 Press △ + or ♥ to select the program position corresponding to the channel whose signal is very strong, and press
- 4 Press △ + or ▽ to move the cursor (>) to ATT, and press ENTER.
- 5 Press △ + or ∇ to select OH, and press

Setting S1 Video

The default setting for S1 Video in the Features menu is ON. If an S1 Video signal is received, the projection TV will automatically display the screen in FULL mode. You can turn this function off by setting S1 VIDEO to OFF.

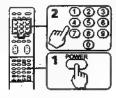
- 1 Press MENU.
- 2 Press $\triangle + \text{ or } \nabla \text{ to move the cursor (} \triangleright \text{) to$ FEATURES, and press ENTER.

FEATURES DI NOTE MODE: WIDE ZOOM AV OUT: VIDEO OFF AV OUT: VIO SLEEP: OFF NR: OFF CONVERGENCE \$1 VIOCO: ON

- 3 Press △ + or ▼ to move the cursor (>) to S1 VIDEO, and press ENTER.
- 4 Press △ + or F to select Off or OFF, and press ENTER.



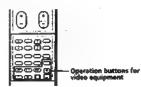
You can use the supplied remote commander to operate the TV and Sony video equipment, such as a VCR or multi-disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.



- 1 Press and hold the POWER button in the VCR control area.
- 2 Press the number buttons that correspond to the remote command mode.

Mode number buttons	Remote commend mode
0 and then 1	VTR1 (e.g., fleta format VCR)
0 and then 2	VTR2 (e.g., 8 mm format VCR)
0 and then 3	VTR3 (e.g., VHS format VCR)
0 and then 4	MDP (multi-disc player)

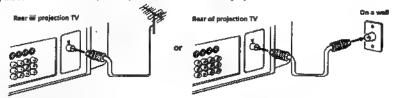
After setting the remote command mode, you can use the following buttons to operate the video equipment.





Connecting a VHF antenna or a combination VHF/UHF antenna—75-ohm coaxial cable (round)

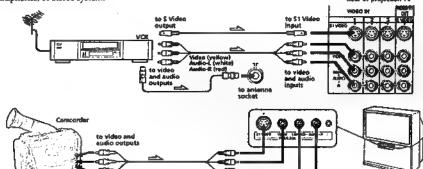
Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the $\mathbb T$ (antenna) terminal at the rear of the projection $\mathbb TV$.



Connecting optional equipment

You can connect optional audio/video equipment to this projection TV such as a VCR, multi-disc player, camcorder, headphones, or stereo system.

Rear of projection TV



When connecting a moneural VCR

Connect the yellow plug to VIDEO and the white plug to AUDIO-L (mono).

Note on the S1 Video signal

When the S1 Video signal in input through the VIDEO 1/2/3 IN jack, set WIDE MODE in OFF if you do not want to display the picture in full wide mode (see page 13).

Lo S Video output

3 C.EM

4

Additional Information

If both 5 Video and video signals are input

The S Video input signal is selected. To view a video signal, disconnect the S Video connection.

Note on the video input

When no signal is input, the screen becomes black and on-screendisplay becomes dark.

When connecting a VCR to the VIDEO 3 IN jacks

This projection TV is equipped with two sets of the VIDEO 3 IN jacks on the front and rear panels. Front and rear jacks are not available to be used at the same time. When using equipment connected, turn off other equipment not in use.



Areas allocated in each channel system

M E/ASIA/CATV W EURO

Afghanistan, Albania, Algeria, Austria, Bahrain, Bangladesh, Belgium, Brunei, Canary Islands, Cyprus, Denmark, Egypt, Finland, Germany, Ghana, Gibraltar, Greece, Iceland, India, Indonesia, Iran, Iraq, Italy, Jordan, Kenya, Republic of Korea, Kuwait, Lebanon, Liberia, Libya, Luxemburg, Malaysia, Malta, Mauritania, Mauritius, Maldives Rep., Morocco, Mozambique, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Portugal, Qatar, Sarawak, Saudi Arabia, Seychelles, Sierra Leone, Singapore, Spain, Srilanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Rep., Tanzania, Thailand, Tunisia, Turkey, Uganda, United Arab Emirates, Western Sahara, Yemen Arab Republic, People's Dem. Rep. of Yemen, Yugoslavia, Zambia, Zimbabwe

AUSTRALIA

Australia, New Zealand

HIK/UK

Hong kong, Ireland, Lesotho, South Africa, United Kingdom

CHINA/E EURO

Benin, Bulgaria, China, Congo, Czechoslovakia, Djibouti Republic, Gabon, Guadeloupe, Guiana, Guinea (P.P.R.), Hungary, Ivory Coast, Dem. People's Rep. of Korea, Madagascar, Mongolia, New Caledonia, Niger, Poland, Reunion, Rumania, Senegal, Tahiti, Togo, Former U.S.S.R., Vietnam, Zaire

AMERICA/CATY AMERICA

Bahama Islands, Barbados, Belize, Bermuda, Bolivia, Burma (UHF), Canada, Chile, Colombia, Costa Rica, Cuba, Dominica Republic, Ecuador, El Salvador, Guam, Guaternala, Haiti, Hawaii, Honduras, Jamaica, Laos, Mexico, Panama, Peru, Philippines, Puerto Rico, Surinam, Taiwan, Trinidad & Tobago, U.S.A., U.S.A. (CATV), Venezuela

JAPAN

Burma (Myanmar) (VHF), Japan (VHF, UHF)

TV and color systems of each channel system

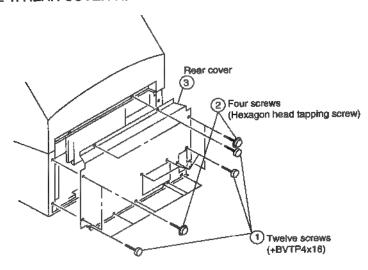
The TV system and color system are automatically set according to the channel system.

Channel system	TV system	Color system
M E/ASIA/ CATV W EURO	B/G, H: West European TV standard	AUTO
AUSTRALIA	B/G, H: Australian TV standard	AUTO
HK/UK	1: British TV standard	OTUA
CHINA/E EURO	D/K: East European TV standard	OTUA
AMERICA/CATY AMERICA	M: American TV standard	AUTO
JAPAN	M: Japan TV standard	ОТИА

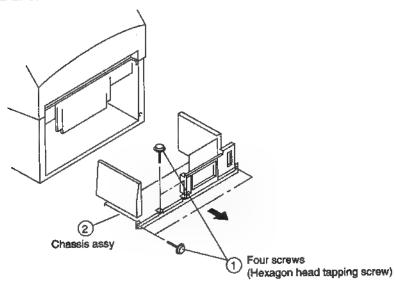
28-EN 1

SECTION 2 DISASSEMBLY

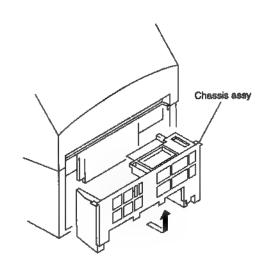
2-1. REAR COVER REMOVAL



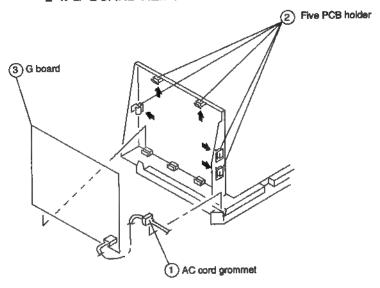
2-2. CHASSIS ASSY REMOVAL

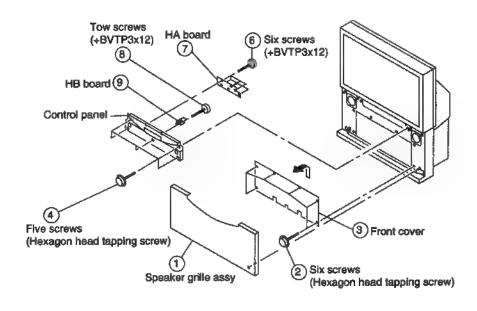


2-3. SERVICE POSITION

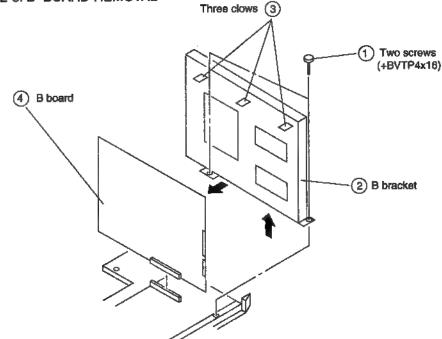


2-4. G BOARD REMOVAL

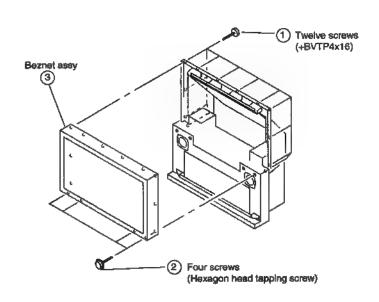




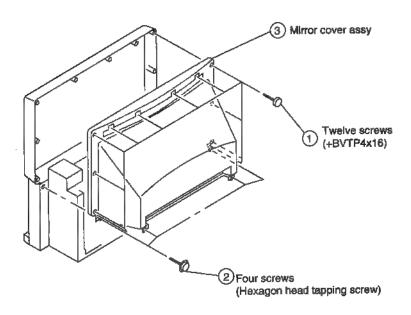
2-6. B BOARD REMOVAL



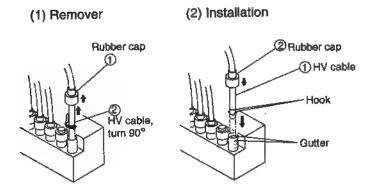
2-8, BEZNET ASSY REMOVAL



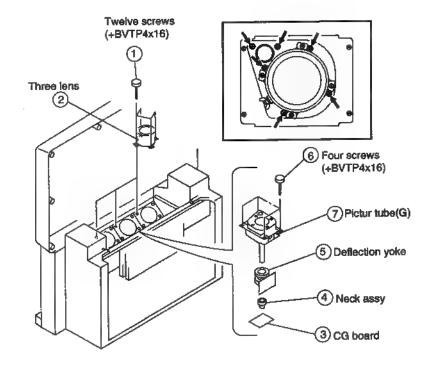
2-9, MIRRER COVER ASSY REMOVAL



2-10, HIGH-VOLTAGE CABLE INSTALLATION



2-11, PICTURE TUBE REMOVAL



SECTION 3 SET-UP ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
SCREEN VOLTAGE ADJUSTMENT (ROUGH AIIGNMENT)				
 Turn the red VR on the FOCUS block all the way to the left and then gradually turn it to the right until the point where you can see the retrace line. Next gradually turn it to the left to the position where the retrace line disappears. 	Monoscope Pattern		PICTUREminimum BRIGHTNESS50% SCREEN (G2)	SCRIEEN O SCRIEE
FOCUS LENS ADJUSTMENT				FOCUS block
 Loose the lens screw. Set in service mode. Use VSP on the service mode menu to shown only the green color. Press the Commander Menu button and select FEATURES and CONVERGENCE to display the test signal on the screen. Rotate the green lens and align with the optimal focus point from the test signal. Use RRH from the service mode menu to set to green and red. Output the test signal and rotate the red lens to obtain the optimum focus at the point where the red and green spots overlap. Use RBH from the service mode menu to set to red and blue. Output the test signal and rotate the blue lens to obtain the optimum focus at the point where the blue and red spots overlap. Tighten the lens screw. 				CONVERGENCE
 Screen Adjustment(G2) Select VIDEO mode without signals. Connect an oscilloscope to the TP7103(KR), TP7203(KG) and TP7303(KB) of CR board, CG board and CB board. Adjust R. G.and B screen voltage to 175VDC with screen VR on the focusblock. 				170±VDC pedestal

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
FOCUS VR ADJUSTMENT 1. Set in service mode. 2. Use VSP on the service mode menu to shown only the green color. 3. Press the Commander Menu button and output the test signal. 4. Rotate the green VR on the FOCUS block and align to obtain				
the optimal focus point. 5. Use RRH from the service mode menu to set to green and red. 6. Output the test signal and rotate the red VR to obtain the optimum focus III the point where the red and green spots overlap. 7. Use RBH from the service mode menu to set to red and blue. 8. Output the test signal and rotate the blue VR aligning to obtain the optimum focus at the point where the blue and red spots overlap.				Lens Scanning line visible. Minimize both A and B.
 DEFLECTION YOKE TILT ADJUSTMENT Set in service mode. Set to receive the monoscope signal. Use VSP on the service mode menu to shown only the green color. Loosen the deflection yoke setscrew and align the tilt of the Deflection Yoke so that the bars at the center of the monoscope pattern are horizontal. After aligning the deflection yoke, fasten it securely to the funnel-shaped portion (neck) of the CRT. The tilt of the deflection yoke for red is aligned with RRH on the service mode menu, and the tilt on the deflection yoke for green is aligned with RBH on the service menu, is aligned the same as was done for green. 	Monoscope pattern			2-pole magnet Deflection yoke Neck Assy Anode cap

	POSITION	LOCATION	AND NUMBER
Dot pattern		2-pole magnet	Use the center dot
Dot pattern		4-pole magnet	Use the center dot $x: y = 1:2$

ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

Use of Remote Commander (RM-Y890) can be performed circuit adjustments about this model.

NOTE: Test Equipment Required.

- 1. Pattern Generator
- 2. Frequency counter
- 3. Digital multimeter
- 4. Audio oscillator

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

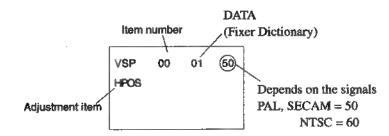
SERVICE MODE PROCEDURE

1. Standby mode. (Power off)

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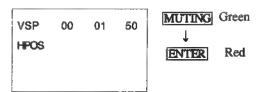
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN

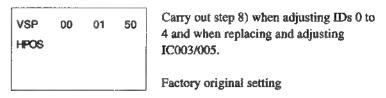


- 3. The CRT displays the item Being adjusted.
- 4. Press $\boxed{1}$ or $\boxed{4}$ on the Remote Commander to select the item.
- 5. Press 1 or 6 on the Remote Commander to change the data.
- 6. If you want to recover the latest values press 0 then ENTER to lead the memory.
- 7. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



8. Press 8 then ENTER on the Remote Commander to initialize.

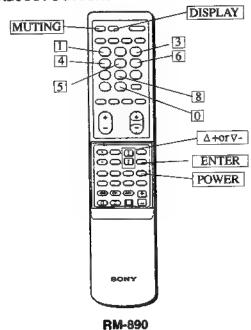


9. Turn set off and on to exit.

2. MEMORY WRITE CONFIRMATION METHOD

- After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
- 2. Turn the power switch ON and set to Service Mode.
- 3. Call the adjusted items again, confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



4. SERVICE MODE LIST

VSP

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SCREEN MODE WZ: WIDE ZOOM, F / N: FULL / NORMAL, Z / ST: ZOOM / SUB TILT

	Item	Adjustment	Data	Ini	tial da	ata	Note	Device
	number	item	range	WZ	F/N	Z/ST	HOLE	Device
VSP	00	HPOS	0-63	30	30	30	H-SHIFT	CXD2018Q
	01	VSIZ	0~63	35	32	32	V-SIZE	(V DSP)
	02	VPOS	0~63	17	17	17	V-SHIFT	
	03	VSCO	0~15		7	7	S-CORRECTION	
	04	VLIN	0 - 15	12	10	10	V-LIN .	
	05	HSIZ	0-63	40	30	30	H-SIZE	
	06	HPIN	0~63	23	27	27	PIN-AMP	
	07	HKEY	0~31	17	-17	17	TILT(TILT)	
	08	UPCP	0~15	6	6	6	UP-COR-PIN	
	09	LOCP	0 - 15	6	9	9	LOW-COR-PIN	
	10	HBOW	0 - 15	8	8	8	V-BOW	
	1 11	HSKE	0~15	8	8	8	V-ANGLE	

DPSCREEN MODE WZ: WIDE ZOOM, F / M: FULL / NORMAL, Z / ST: ZOOM / SUB TILT

	Item	Adjustment		Ini	tial da	ata		
	number	item	Data range	WZ	F/N	Z/ST	Note	Device
R GH	00	CENT	-127~+127	0	0	0	SUB G. H CENTER	CXP85112
	01	SKEW	-127~+127	0	0	0	SUB G. H SKEW	(REGI µCOM)
	02	BOW	-127 -+127		0	0	SUB G. H BOW	
	03	4 BOW	-127 - +127	10	0		SUB G. H 4th BOW	1
1	04	SIZE	-127 -+127	0	0		SUB G. H SIZE	
	05	LIN	-127 +127	5	0	0	SUB G. H LINEARITY	
	06	M SIZ	-127 ~ +127	-45	0	0	SUB G. H MID SIZE	
	07	MLIN	-127 ~ +127	0	0	0	SUB G. H MID LINEARITY	
	08	KEY	-127 - +127	0	0	0	SUB G. H KEYSTONE	
	-09	SSKW	-127 -+127	0	10	0	SUB G. H SUB SKEW	
	10	MPIN	-127~+127	0	0	0	SUB G. H MID PINCUSHION	
	11	PIN	-127~+127	0	0	0	SUB G. H PINCUSHION	
	12	SBOW	-127 ~ +127	0	0	0	SUB G. H SUB BOW	
	13	M BOW	-127~+127	0	0	10	SUB G. H MID BOW	
	14	4PIN	-127 - +127	0	-40		SUB G. H 4th PINCUSHION	
	15	4 SBO	-127 - +127	0	0	0	SUB G. H 4th SUB BOW	- 1
R GV	00	CENT	-127~+127	0	0	0	SUB G. V CENTER	
	100	SKEW	-127 ~ +127	0	0	0	SUB G. V SKEW	
	02	BOW	-127 ~ +127	3	3	3	SUB G. V BOW	
	03	SIZE	-127 +127	0	0	0	SUB G. V SIZE	
	04	LIN	-127 ~ +127	0	0	п	SUB G. V LINEARITY	1
	05	M SIZ	-127 - +127	100	0	0	SUB G. V MID SIZE	
	06	M KEY	-127 +127	0	0	0	SUB G. MID KEYSTONE	
	07	KEY	-127 ~ +127	10	10	10	SUB G. V KEYSTONE	
	-08	SSKW	-127 ~ +127	0	0	0	SUB G. V SUB SKEW	
	09	M PIN	-127 -+127	15	10	10	SUB G. V MID PINCUSHION	
	10	PIN	-127 -+127	- 15	- 10	-10	SUB G. V PINCUSHION	
	11	SBOW	-127 ~+127	0	0	0	SUB G. V SUB BOW	
	12	WAVE	-127~+127	0	0	0	SUB G. V 3th WAVE	
	13	4PIN	-127 ~ +127	-15	0	0	SUB G. V 4th PINCUSHION	- I
R RH	00	CENT	-63 - +63	0	0	0	SUB R. H CENTER	
	01	SKEW	-127 ~ +127	0	0	0	SUB R. H SKEW	
	02	BOW	-127 ~ +127	0	0	0	SUB R. H BOW	
	03	4BOW	-127 ~ +127	0	0	0	SUB R. H 4th BOW	
	04	SIZE	-127 -+127	0	0	0	SUB R. H SIZE	
1	05	LIN	-127 -+127	5	0	0	SUB R. H LINEARITY SUB R. H MID SIZE	
	06	MSIZ	-127 ~ +127	1	_	0		
	07	MLIN	-127 ~ +127	5	0	0	SUB R. H MID LINEARTIY	
	08	KEY	-127 +127	0	0	0	SUB R. H KEYSTONE SUB R. H SUB SKEW	
	09	SSKW	-127 ~+127	0	5	5	SUB R. H MID PINCUSHON	
	10	MPIN	-127 ~+127	10	1 3	1 3	DOD K THE PRODUCTION	1

	Item	Adjustment		Initial data		ata		
	number	item	Data range	WZ	F/N	Z/ST		Device
R GH	11	PIN	-127 -+127	0	5	5	SUB R. H PINCUSHON	CXP85112
	12	SBOW	-127 ~ +127	45	45	45	SUB R. H SUB BOW	(REGI µCOM)
	13	MBOW	-127~+127	0	0	0	SUB R. H MID BOW	1
	14	4PIN	-127~+127	0	-4	-4	SUB R. H 4th PINCUSHON	
	15	4SBO	-127 +127	0		0	SUB R. H 4th SUB BOW	
R RV	00	CENT	-63 - +63	30	30	30	SUB R. V CENTER	
	01	SKEW	-127~+127	0	0		SUB R. V SKEW	
	02	BOW	-127~+127	3	3	3	SUB R. V BOW	
	03	SIZE	-127 -+127	-10	-10	-10	SUB R. V SIZE	
	04	LIN	-127 - +127	0			SUB R. V LINEARITY	
	05	MSIZ	-127~+127	7	0	0	SUB R. V MID SEZE	
	06	MKEY	-i27~+127	8	8	8	SUB R. V MID KEYSTONE	
	07	KEY	-127~+127	-15	-15	- 15	SUB R. V KEYSTONE	
	08	SSKW	-127 - +127	0	0	0	SUB R. V SUB SKEW	
	09	MPIN	-127~+127	15	10	10	SUB R. V MID PINCUSHON	
	10	PIN	-127 -+127	15	-5	5	SUB R. V PINCUSHON	
	11	SBOW	-127~+127	0	0	0	SUB R. V SUB BOW	
	12	WAVE	-127~+127	0	0	0	SUB R. V 3th WAVE	
	13	4PIN	-127 ~ +127	-15	0	0	SUB R. V 4th PINCUSHON	
R BH	00	BSEL	0~1	0	0	0	0:R-MUTE 1:G-MUTE	
	01	CENT	-63~+63	0	0		SUB B. H CENTER	
	02	SKEW	-127 +127	0	0	0	SUB B. H SKEW	
	03	BOW	-127 +127	0	0	0	SUB B. H BOW	
	04	4BOW	-127~+127	0	0	0	SUB B. H 4th BOW	
	05	SIZE	-127 ~ +127	0	0	0	SUB B. H SIZE	
	06	LIN	-127~+127	5	10-	0	SUB B. H LINEARITY	
	07	MSIZ	-127 -+127	-40	0	0	SUB B. H MID SIZE	
	08	MLIN	-127 ~ +127	-5	0	0	SUB B. H MID LINEARITY	
	09	KEY	-127 ~+127	0	0	0	SUB B. H KEYSTONE	
	10	SSKW	-127~+J27	0	0	0	SUB B. H SUB SKEW	
	- 11	MPIN	-127 -+127	Ш	5	5	SUB B. H MID PINCUSHON	
	12	PIN	-127~+127	0	5	5	SUB B. H PINCUSHON	
	13	SBOW	-127~+127	-45	-45	-45	SUB B. H SUB BOW	
	14	MBOW	-127~+127	0	0	0	SUB B. H MID BOW	
Į	15	4PIN	-127~+127	0	-4	-4	SUB B. H 4th PINCUSHON	
	16	4SBO	-127 +127	0	0	0	SUB B. H 4th SUB BOW	
R BV	00	CENT	-63+63	30	30	30	SUB B. V CENTER	
	01	SKEW	-127 - +127	0	0	0	SUB B. V SKEW	
	02	BOW .	-127~+127	3	3	3	SUB B. V BOW	
	03	SIZE	-127~+127	-10	-10	- 10	SUB B. V SIZE	
'	04	LIN	-127~+127	0	0	0	SUB B. V LINEARITY	
	05	MSIZ	-127 -+127	7	0	0	SUB B. V MID SIZE]
	06	MKEY	-127 -+127	-8	-8	-8	SUB B. V MID KEYSTONE	

	Item	Adjustment			itial d	ata	A1-2-	
	number	item	Data range	WZ	F/N	Z/ST	Note	Device
R BV	07	KEY	-127 -+127	5	5	5	SUB B. V KEYSTONE	
	08	SSKW	-127~+127	0	0	0	SUB B. V SUB SKEW	
	09	MPIN	-127 +127	15	0	0	SUB B. V MID PINCUSHON	
	10	PIN	-127 +127	- 10	-30	-30	SUB B. V PINCUSHON	
	11	SBOW	-127~+127	0	0	0	SUB B. V SUB BOW	
	12	WAVE	-127~+127	0	0	0	SUB B. V 3th WAVE	
	13	4PIN	-127 -+127	15	0	0	SUB B. V 4th PINCUSHON	

D/A

	Item number	Adjustment item	Data range	Initial data	Note	Device
D/A	00 01	BKU BKD	0 - 63 0 - 63	50 10	BLK UP-SIDE BLK DOWN-SIDE	CXA1315M

MCD

	Item number	Adjustment item	Data range	Initial data	Note	Device
MCD	00	MHUE	0~31	15	Main NTSC Hue for main picture	TDA9141
			i		(Off Set)	(Main CHROMA DECODER)

SCD

	Item number	Adjustment item	Data range	Initial data	Note	Device
SCD	00	SHUE	0 ~ 31	15	Sub NTSC Hue for main picture	TDA9160A
					(Off Set)	(SUB CHROMA DECODER)

AP

	Item number	Adjustment item	Data range	Initial data	Note	Device
AP	00	FAW	0 ~ 255	00	NICAM FAW THRESH	MSP3410
	01	CTM	0 ~ 255	8	ERROR BIT MONO	(AUDIO PROS / STEREO
	02	CTN	0 ~ 255	80	ERROR BIT NICAM	DECODER)
	03	WGO	0 ~ 255	100	DIFFERENCE (W / G)	
	Đ4	WGS	0 - 255	21	DECISION POINT (STEREO W / G)	
	05	WGT	0 ~ 255	80	TIMER (W / G)	
	06	WGB	0 ~ 255	234	W, G, CONST	
	07	ACG	0~1	1	AGC AUTO / CONST	
	08	CDB	0~127	40	AGC GAIN / CONST	
	09	FMP	0 - 127	34	FM MONO PRESCALE	
	10	WGP	0 - 127	60	W, G, PRESCALE	
	11	NIP	0 ~ 127	127	NICAM PRESCALE	
	12	CRM	0~1	10	CARRIA MUTE	
	13	ACO	0-1	1	AUDIO CLOCK OUT	
	14	WAC	0 1	1	W / G JUDGEMENT	

	Item number	Adjustment item	Data range	Initial data	Note	Device
PIP	00	RDV	0 - 15	5	V READ DELAY	SDA9188
					(OFF SET TO EACH POSITION)	(PINPPROCESSOR)
	01	RDH	0 ~ 63	17	H READ DELAY	
			ĺ		(OFF SET TO EACH POSITION)	
	02	FRY	0 - 15	4	FRAME BRIGHTNESS	
1	03	9V50	0~7	3	MULTI PIP V 50Hz	
•	04	9H50	0~7	3	MULTI PIP V 50Hz	
}	05	9V60	0~7	3	MULTI PIP V 60Hz	
1	06	9H60	0 - 7	3	MULTI PIP V 60Hz	
[07	SCON	0~15	8	PIP SUB CONTRAST	

IPQ

	Item number	Adjustment item	Data range	Initial data	Note	Device
IPQ	00	CIN	0 ~ 1	0	CINE MODE 0: OFF, 1: ON	83C652
İ	01	107	0 1	1	SET TMS4C1070	(FIELD DOBLE /
	02	LFR	0 1	1	LINE FLICKER REDUCTION	ASPECT CONV)
	ŀ				0 : OFF, 1 : ON	
	03	HWE	0 ~ 15	13	H PISITION (ADJUSTMENT	
					AT NORMAL MODE)	
	04	NR	0~3	2	NOISE REDUCTION LEVEL	
	05	Y-V	0 - 127	80	Y LEVEL FOR BACKGROUND	
	06	UV-V	0 ~ 127	0	UV LEVEL FOR BACKGROUND	
ļ	07	PEAK	0 - 127	8	PEAKING LEVEL	
	08	CTI	0~127	64	CTJ LEVEL	!
ŀ	09	VWE	0 ~ 63	26	VWEI DELAY	
	10	2BLO		0		
	11	BOXP		0		

CPU

	Item number	Adjustment item	Data range	Initial data	Note	Device
CPU	00	OSH	0 - 63	23	OSD POSITION H	CXP5400
li	00	ODL	0 - 255	15	POWER ON DELAY	(SYS, µCOM)
	02	WIDE	0~1	1	RELAY FOR WIDE MODEL	
			1		0:4:3 1:16:9	
	03	TWIN	0~1	1	0 : Sub V FIELD PROCESSING	
					1 : Sub V FRAM PROCESSING	
	04	DSPC	0~1	1	0 : ENABLE RECEIVE OF CHANNEL	
					IDENTICAL TO TWIN PICTURE	
					1 : DISABLE RECEIVE OF CHANNEL	
					IDENTICAL TO TWIN PICTURE	

TXT

	Item number	Adjustment item	Data range	Initial data	Note	Device
TXT	00	TXH	0 ~ 255	10	TEXT H POSITION	TPU3040
	01	TXV	0 - 127	46	TEXT V POSITION	(TEXT PROCESSOR)
	02	VSP	0 ~ 255	59	WST LAYER V STOP	
	03	BSP	0 ~ 255	61	BLANKING STOP	
	04	BST	0 ~ 255	53	BLANKING START	
	05	QSF	0 - 31	1	ACQ SOFT SLICER	
	06	A7F	0 ~ 63	10	ADD 7FH DATA	
	07	QDT	0 ~ 63	13	ACQ DATA SLICER	
	00	CST	0 ~ 127	0	CLAMPING START	
	09	CSP	0 ~ 255	80	CLAMPING STOP	
į	10	LMT	0~1	0	LIMIT SLICER ADAPT	
	11	GMX	0 ~ 255	31	GAIN MAX	
	12	FMX	0 ~ 255	31	FILTER MAX	
	13	TVER	0~	3	TEXT VERSION	
	14	VSP	0 - 255	59	WST LAYER V STOP	

RGB

	Item number	Adjustment item	Data range	Initial data	Note	Device		
RGB	00	SCOL	0 ~ 63	31	SUB COLOR (OFF SET)	TDA4780		
	01	\$BRT	0 ~ 63	31	SUB BRUGHT (OFF SET)	(RGB VIDEO PROCESSOR)		
	02	RAMP	0 ~ 63	31	RED GAIN FOR WHITE BALANCE			
	03	GAMP	0 ~ 63	31	GREEN GAIN FOR WHITE			
					BALANCE			
	04	BAMP	0 - 63	48	BLUE GAIN FOR WHITE BALANCE			
	05	RCUT	0~63	31	RED CUT OFF FOR WHITE			
			i		BALANCE			
	06	GCUT	0 ~ 63	31	GREEN CUT OFF FOR			
					WHITE BALANCE			
	07	BCUT	0 ~ 63	48	BLUE CUT OFF FOR			
					WHITE BALANCE			
j l	08	PDL	0~63	20	PEAK DRIVE LIMITER LEVEL			
	09	GNMA	0 ~ 63	20	GANMA			
	10	AFBL	0~1	0	ACTIVE BLACK 0 : OFF, 1 : ON			
	11	RELC	0~1	1	RELATIVE C/O			
.	12	TCPL	0~1	1	TIME CONST PEAK LIMITER			
-					0 : 2fH, 1 : 1fH			
	13	AXIS	0 – 1	- 1	NTSC AXISAL			

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
[FULL MODE ADJUSTMENT]				
CONVERGENCE MAIN ADJUSTMENT				
Receive the signal and set at "FULLMODE", select the adjustment item in service mode.	Monoscope pattern or Crosshatch			
GREEN REGISTRATION ADJUSTMENT	pattern		<vsp menu=""></vsp>	
V-SHIFT adjustment			VPOS (02)	VPOS
·				O+O+
V-LINEARITY adjustment			VLIN (04)	VLIN • • • • • • • • • • • • • • • • • • •
VICENT VICENTIAN CONTRACTOR			MCTT (A1)	VSIZ
V-SIZE, V-CORRECTION adjustment While tracking, adjust so that the lattice intervals for V-SIZE and VSCO are equal.			VSIZ (01) VSCO (03)	V3IZ
				vsco
H-SHIFT adjustment			HPOS (00)	HPOS
- N-SIII. I aujustiieitt			III 05 (00)	
H-SIZE adjustment			HSIZE (05)	HSIZE
Finely adjust with SUB MSIZE.				
• PIN-AMP adjustment			HPIN (06)	HPIN
Finely adjust with SUB MPIN.				

	EQUIPMENT	MEASUREMENT	ADJUSTMENT	ILLUSTRATION AND SHAPE
ADJUSTMENT ITEM AND PROCEDURE	AND SIGNAL	POSITION	LOCATION	AND NUMBER
UPPER/LOWER-CORNER PIN adjustment Correct the screen top and bottom section line bow. However, if this adjustment is overdone, distortion may occur with the PIN-AMP adjustment that can not be adjusted away.			UPCP (08) LOCP (09)	LOCP
Note: The PIN-AMP adjustment adjusts the overall screen from top to bottom, but the UPPER/LOWER-CORNER PIN adjustments have just large movement in the top and bottom sections, so be careful.				→
V-ANGLE, V-BOW adjustment Correct the tilt and bow of the vertical line III the center of the screen.			HSKE (11) HBOW (10)	HSKE
				HBOW →
• TILT adjustment Adjust to eliminate the tilt of one of the two vertical lines at both ends of the screen.			HKEY (07)	HKEY -

ADJUSTMENT ITEM AND PROCEDURE								EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
CONVERGENCE SUB ADJUSTMENT											
Adjustme				• • • • • • • • • • • • • • • • • • • •	••						
			A	Adjustn	nent typ	oe oe					
Display	Adjustment item	RGH	RGV	RRH	RRV	RBH	RBV				
BSEL	COL SELECT	-	-		_	0	-				
CENT	CENT	0	0	0	0	0	0				
SKEW	SKEW	0	0	0	0	0	0				1
BOW	BOW	0	0	0	0	0	0				
4BOW	4TH BOW	0	_	0		0	-				
SIZE	SIZE	0	0	0	0	0	0				
LIN	LIN	0	0	0	0	0	0				
MSIZ	MID SIZE	0	0	0	0	0	0				
MLIN	MID LIN	0	0	0	-	0	-				
MKEY	MID KEY	_	0	-	0	-	0				
KEY	KEY	0	0	0	0	0	0				
sskw	SUB SKEW	0	0	0	0	0	0				
M PIN	MID PIN	0	0	0	0	0	0				
PIN	PIN	0	0	0	0	0	0		!		
SBOW	SUB BOW	О	0	0	0	0	0				
WAVE	WAVE	-	0	_	0	-	0				
MBOW	MID BOW	0	-	0	-	0	-				
4PIN	4TH PIN	0	0	0	0	0	0				
4SBOW	4TH SUB BOW	0	- "	0	_	0	_				

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN SUB ADJUSTMENT SCREEN CENTER SECTION GREEN VERTICAL LINE ADJUSTMENT Final addition with RCM CENTER RCM RCM RCM RCM.			<rgh menu=""></rgh>	Watch out only for the
Finely adjust with RGH CENT, RGH BOW, RGH SKEW. Adjust watching out for the RGH CENT screen center section.			RGH CENT (00) RGH BOW (02) RGH SKEW (01)	GH CENT center point.
				Watch the vertical center line.
				RGH CENT
				RGH BOW
				RGH SKEW
RGH 4TH BOW adjustment Correct the corner distortion that could not be adjusted away with the RGH BOW adjustment.			RGH 4BOW (03)	RGH 4BOW +

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
SCREEN CENTER SECTION GREEN HORIZONTAL LINE ADJUSTMENT			<rgv menu=""></rgv>	
Finely adjust the center position of the vertical line at the center of the screen with RGV CENT.			RGV CENT (00)	Watch the horizontal center line. Watch out only for the RGV CENT center point.
				RGV CENT
Correct the tilt and bow of the horizontal line at the center of the screen with RGV SKEW and RGV BOW.			RGV SKEW (01) RGV BOW (02)	RGV SKEW
				RGV BOW
 GREEN SIZE AND LINEARITY ADJUSTMENT Balance the sizes at both sides of the center section of the screen with RGH MLIN. Balance the sizes on both end sections of the screen with RGH LIN. While tracking, adjust with RGH MLIN and RGH LIN so that the sizes of the horizontal line at the center of the screen are 			<rgh menu=""> RGH MLIN (07) RGH LIN (05)</rgh>	MLIN
symmetrical left and right.				

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN HORIZONTAL SIZE ADJUSTMENT			<rgh menu=""></rgh>	I
1. Adjust with RGH MSIZE so that the sizes of both ends and of			RGH MSIZ (06)	
both sides of the center section of the screen are equal. 2. Adjust with RGH SIZE so that the horizontal sizes of both			BCII SIZE (04)	
ends and of both sides of the center section of the screen are equal.			RGH SIZE (04)	MSIZ ()) SIZE
3. While tracking, adjust with RGH MSIZ and RGH SIZE so that				
the lattice intervals for the horizontal line section of the center				-4-4-4
section of the screen are equal and so that the horizontal size is the prescribed value.				
4. If M LIN is changed when the RGH MSIZ and RGH SIZE				,
adjustment is complete, adjust again while tracking.				GH MUN
				GHMSIZ GHUN
				A A
				GHSIZE
With just the H SIZE adjustment in MAIN, if there is no need to adjust RGH SIZE in SUB this can save power.		*		
GREEN VERTICAL LINEARITY ADJUSTMENT				
1. Adjust RGV LIN so that the vertical lines at the top and			<rgv menu=""></rgv>	Į.
bottom of the screen are symmetrical.			RGV LIN (04)	
				_ (- -
				

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
 GREEN VERTICAL SIZE ADJUSTMENT Adjust with RGV MSIZE so that the sizes for the top and bottom sections of the screen and for both sides of the center section of the screen are equal. Set the vertical size to the prescribed value with RGV SIZE. Adjust RGV MSIZ and RGV SIZE watching the vertical line at the center section of the screen. While tracking, adjust with RGV MSIZ and RGV SIZE so that the lattice intervals for the vertical line section of the center section of the screen are equal and so that the vertical size is the regulation value. If RGV LIN is out of place when the RGV MSIZ and RGV SIZE adjustment is complete, adjust again while tracking. If there is no need to adjust RGV SIZE in SUB with just the V SIZE adjustment in MAIN, this can save power. 			<rgv menu=""> RGV MSIZ (05) RGV SIZE (03)</rgv>	MSIZ SIZE GV LIN GV LIN
GREEN HORIZONTAL TRAPEZOIDAL DISTORTION ADJUSTMENT 1. Adjust with RGH SSKW so that the tilt of the vertical lines at both ends of the screen is symmetrical left and right. 2. Adjust with RGH KEY so that there is no tilt in the vertical lines at both ends of the screen. 3. If there is a tilt on either the left or right after the RGH KEY adjustment, adjust while tracking.			<rgv menu=""> RGH SSKW (09) RGH KEY (08)</rgv>	SS KW

EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
		<rgh menu=""></rgh>	
		RGH 4PIN (14) RGH 4SBO (15)	4 PIN 4SBO
		<rgh menu=""> RGH MBOW (13) RGH SBOW (12)</rgh>	M BOW
			AND SIGNAL POSITION LOCATION <rgh menu=""> RGH 4PIN (14) RGH 4SBO (15) <rgh menu=""> RGH MENU> RGH MBOW (13)</rgh></rgh>

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN HORIZONTAL SYMMETRICAL PIN DISTORTION			<rgh menu=""></rgh>	
ADJUSTMENT				
 Adjust the pin distortion at both sides of the center section of the screen with RGH MPIN. Adjust the pin distortion at both end sections of the screen with RGH PIN. While tracking, adjust with RGH MPIN and RGH PIN so that the PIN of vertical lines on the entire screen have no bowing. If there is asymmetrical pin distortion after the RGH MPIN and RGH PIN adjustments, adjust with RGH MBOW and RGH SBOW while tracking. 			RGH MPIN (10) RGH PIN (11) RGH MBOW (13) RGH SBOW (12)	Name of the second state o
•With just the PIN AMP adjustment in MAIN, if there is no need to adjust RGV PIN in SUB, this can save power.				GH MPIN GH SBOW
GREEN VERTICAL WAVE (TERTIARY DISTORTION)			<rgv menu=""></rgv>	
ADJUSTMENT				
Take the screen top and bottom horizontal lines with RGV WAVE and find the secondary and quaternary waveform.			RGV WAVE (12)	RGV WAVE
There is KEY distortion after the RGV WAVE adjustment, so adjust with GV WAVE and RGV KEY while tracking.			RGV KEY (07)	RGV KEY GH MPIN

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN VERTICAL QUATERNARY DISTORTION			<rgv menu=""></rgv>	
ADJUSTMENT				
 Correct the quaternary distortion of the horizontal lines at the top and bottom sections of the screen with RGV 4PIN. 			RGV 4PIN (13)	RGV 4PIN
1) Since there is no 4SBO for vertical correction, there will be slight imbalance, but adjust to eliminate the distortion from the horizontal line at either the top or the bottom of the screen.				
2) In many cases, the horizontal lines at the top and bottom sections of the screen are not straight lines after the adjustment. As long as the secondary distortion is mild enough that it can be corrected with the PIN adjustment, this is OK.				
GREEN VERTICAL TRAPEZOIDAL DISTORTION			<rgv menu=""></rgv>	
ADJUSTMENT			RGV SSKW (08)	RGV SSKW
 Adjust with RGV SSKW so that the tilt of the horizontal lines at the top and bottom sections of the screen is symmetrical about the center position horizontal line. Adjust with RGV MKEY so that there is no tilt for the line 			RGV MKEY (06)	
sections III both sides of the horizontal lines at the center section of the stream. 3. Adjust with RGV KEY so that there is no tilt for the horizontal			RGV KEY (07)	
lines III the top and bottom sections of the screen. 4. While tracking, adjust with RGV MKEY and RGV KEY so that there is no tilt for the horizontal lines on the entire screen.				MKEY KEY
5. If the tilt is unbalanced after the RGV MKEY and RGV KEY adjustment, adjust again with RGV SSKW.			RGV SSKW (08)	GV SSKW GV KEY GV MKEY

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN VERTICAL ASYMMETRICAL PIN DISTORTION			<rgv menu=""></rgv>	
(SECONDARY DISTORTION) ADJUSTMENT				
Correct the asymmetrical pin distortion at the top and bottom sections of the screen with RGV SBOW.			RGV SBOW (11)	RGV SBOW
GREEN VERTICAL ASYMMETRICAL PIN DISTORTION ADJUSTMENT			<rgv menu=""></rgv>	
1. Adjust the pin distortion for both side sections and the center of the screen with RGV MPIN. 2. Adjust with RGV PIN so that the horizontal lines at the top and bottom sections of the screen are straight lines.			RGV MPIN (09) RGV PIN (10)	
Adjust with RGV MPIN and RGV PIN so that there is no curve in the horizontal lines on the entire screen.				MPIN PIN
4. After the adjustments in Items 1-3, adjust the tracking with RGV SBOW, RGV MPIN, and RGV PIN.			RGV SBOW (11)	GV SBOW GV PIN

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN AND RED REGISTRATION ADJUSTMENT (RRH, RRV) 1. Receive a PAL cross-hatch signal. 2. Adjust so that the red lines lay on the green lines. Adjust with the same procedure as the GREEN SUB adjustment.	PAL Cross-hatch pattern			
 Notes: 1. The main correction is not carried out during red registration adjustment. 2. Beware. The green adjustment items can be changed by mistake. 3. Unlike for green, adjust within the range -124 ~ +124. 				
GREEN AND BLUE REGISTRATION ADJUSTMENT				
(RBH, RBV)				
 Receive a PAL cross-hatch signal. Adjust so that the blue and green lines are on top of each other. 	PAL Cross-hatch pattern			
Notes: 1. The main correction is not carried out during RED registration adjustment. 2. Beware. The GREEN and RED adjustment items can be changed by mistake.				
 Receive "ALL WHITE SIGNAL" and confirm the registration. After the registration adjustment in "FULL MODE", write the data in memory by pressing MUTING and O on the remote commander. 				
5. Then, copy the data of "FULL / ZOOM" by pressing 2 and 0 on the commander and copy the data of "50/60Hz" by pressing DISPLAY and 0.				

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
WHITE BALANCE ADJUSTMENT 1. Receive the monoscope pattern signal and adjust the picture quality with the menu. 2. Adjust service mode SBRT so that the signal 10 IRE section barely glows. 3. Receive the all-white pattern signal. 4. Adjust the white balance with service mode GCUT and BCUT. 5. Adjust service mode SBRT so that the signal 100 IRE section barely glows.	Monoscoope pattern All-white pattern		PICTURE Minimum < RGB MENU > SBRT (03) GCUT (06) BCUT (07) PICTURE	
 6. Adjust the white balance with service mode GAMP and BAMP. 7. Repeatedly adjust the white balance for the minimum and maximum picture settings. 			Minimum GAMP (03) BAMP (04) PICTUREMaximum	

SECTION 4 ELECTRICAL ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
B BOARD ADJUSTMENT COLOR ADJUSTMENT 1) SUB-HUE AND SUB-COLOR ADJUSTMENT (MAIN SCREEN) 1. Input the signal and put the set into service mode. 2. Connect an oscilloscope between connector on the B(1/4) board. 3. Adjust SHUE and SCOL so that Vw = Vcy = VMg=VBI in the waveform levels. 4. Write the data to memory.	Color Bar pattern Oscilloscope	CN4 ⑦ pin (B(1/4) Board)	SHUE, SCOL : Vw = Vcy =Vmg=VBI MUTING	
 SUB-HUE (P IN P SCREEN) Input the signal and put the set into service mode. Connect an oscilloscope between connector on the B(1/4) board. Adjust SHUE so that Vw = Vcy = VMg=VBI in the waveform levels. Write the data to memory. 	Color Bar pattern Oscilloscope	CN4 ⑦ pin (B(1/4) Board)	ENTER SHUE: Vw = Vcy = Vmg = VBI MUTING LENTER	CN4 ② pin OUTPUT> (TWIN PICTURE MODE) W Cy Mg BI W Cy Mg BI YW G R Bk YW G R Bk
SUB BRIGHTNESS ADJUSTMENT 1. Receive the signal and adjust the picture quality with the menu. 2. Adjust service mode SBRT so that the signal 10 IRE section barely glows.	Monoscoope pattern		PICTUREMinimum SBRT	Vw Vcy VMg VBI Vw Vcy VMg VBI
1. Upon receiving the signal, select NORMAL in SCREEN mode. 2. In SERVICE mode adjust "HWE" so that the video signal is balanced on left and right (symmetrical).	Monoscoope pattern		HWE MUTING LENTER	MAIN P IN P SCREEN SCREEN 31.75 µsec

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
1. Upon receiving the Monoscope signal, select FLL in SCREEN mode. 2. Set SERVICE mode and then press the P in P command twice. The P in P position will then move periodically to four points. Adjust "RDV" and "RDH" on the new screen so that the four points are distributed equally at; up, down, left and right.	Monoscope pattern		RDV (side) RDH (length)	
1. Receive the overlapping TEXT signal. 2. Set the TEXT in MIX mode and adjust the screen positon with "TXH" and "TXV". OSD POSITION ADJUSTMENT 1. Receive the Color signal and select a mode other than NORMAL mode. 2. Adjust "OSH" so that the center line of the signal and the center of the crosshairs of the OSD display match are aligned with each other.	PAL COLOR Bar pattern		TXH TXV MUTING ENTER OSH MUTING LENTER	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
[ZOOM MODE ADJUSTMENT] V BLANKING SIZE ADJUSTMENT 1. Receive PAL monoscope signal and set at "ZOOM MODE". 2. Select "BKU" in D/A menu. 3. Reduce the data value by pressing 3 and 6 on the commander to adjust blanking size and minimize the shear on the screen top. 4. Select "BKD" in D/A menu. 5. Raise the data value by pressing 2 and 6 on the commander to adjust blanking size and minimize the shear on the screen bottom.	PAL Monoscoope pattern			
 V SIZE ADJUSTMENT Receive PAL monoscope signal and set at "ZOOM MODE". Select "V SIZE" in VSP menu. Set the V size at 9.4 ± 0.312 by pressing 3 and 6 on the commander. * • After the registration adjustment in "ZOOM MODE", write the data in memory by pressing MUTING and 0 on the commander. • Then, copy the data of "50/60Hz" by pressing DISPLAY and 0. 	PAL Monoscoope pattern			
 * "WIDE ZOOM" proceed MAIN and SUB REGISTRATION ADJUSTMENT like "FULL MODE". • After the registration adjustment in "ZOOM MODE", write the data in memory by pressing MUTING and ID on the commander. • Then, copy the data of "50/60Hz" by pressing DISPLAY and ID. 				

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT	MEASUREMENT	ADJUSTMENT	ILLUSTRATION AND SHAPE
ADDOG THE REPORT OF THE PROPERTY OF THE PROPER	AND SIGNAL	POSITION	LOCATION	AND NUMBER
 H SIZE ADJUSTMENT Receive a PAL monoscope signal to set to "ZOOM MODE". Set to Service Mode. Select H SIZE of VSP menu with the commander buttons 1 and 4. Adjust to 15.5 ± 0.3 square with 3 and 6. 	PAL Monoscoope pattern			
[WIDE ZOOM ADJUSTMENT]				1
S CORRECTION ADJUSTMENT 1. Receive a PAL monoscope signal to set to "WIDE ZOOM". 2. Set to Service Mode. 3. Select VSCO of VSP menu with the commander buttons 1 and 4. 4. Adjust to data "00" with 3 and 6.	PAL Monoscoope pattern			
 V SIZE ADJUSTMENT Receive a PAL monoscope signal to set to "WIDE ZOOM". Set to Service Mode. Select V SIZE of VSP menu with the commander buttons 1 and 4. Adjust to 11.2 ± 0.2 square with 3 and 6. 	PAL Monoscoope pattern			
H SIZE ADJUSTMENT 1. Receive a PAL monoscope signal to set to "WIDE ZOOM". 2. Set to Service Mode. 3. Select H SIZE of VSP menu with the commander buttons 1 and 4. 4. Adjust to 15.5 square with 3 and 6.	PAL Monoscoope pattern			

SECTION 5 SAFETY RELATED ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
[E BOARD] R988 RESISTOR CONFIRMATION METHOD (HV HOLD DOWN CONFIRMATION) AND ADJUSTMENTS			№ R988	Remove the cap off from the unused terminal and connect a static voltmeter there.
The following adjustments should always be performed when replacing the following components (marked with on the schematic diagram).		C4057, D4026, R988, R4019, T4002, T4003 (FBT), E BOARD, HV Block		
 Remove the cap for the unconnected pin in the high-voltage block and connect a HIGH-VOLTAGE Voltmeter. Receive the Dot signal and set the PICTURE and BRIGHTNESS setting to their minimums. Connect a 68kΩ variable resistor across the E board CN4007 connector (with the variable resistor set to its minimum). Gradually upper the value of the variable resistor and check that the hold down circuit operates at a HIGH-VOLTAGE Voltmeter reading of 34.40 ± 0.40kVDC and that the rasters disappear. When the hold-down circuit starts operating, switch OFF the power of the set immediately. Remove the VR connected to CN4007 and measure resistance value. Solder a resistor (METAL OXIDE 1/4W), whose resistor value is equivalent to measured above, to CN4007 in place of the VR. Check Item 5 again. 	HIGH-VOLTAGE Voltmeter Dot signal	HV Block CN4007 HIGH-VOLTAGE Voltmeter` 34.40 ± 0.40kVDC	PICTUREminimum BRIGHTNESSminimum	E BOARD COMPONENT SIDE- CH4006 CN4007 CN4007 CN4007 CN4007 CN4007

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
 R983 RESISTOR CONFIRMATION METHOD (HV REGULATION CONFIRMATION) AND READJUSTMENTS The following adjustments should always be performed when replacing the following components (marked with on the schematic diagram) Remove the cap for the unconnected pin in the high-voltage block and connect a HIGH-VOLTAGE Voltmeter. Receive the Dot signal and set the PICTURE and BRIGHTNESS settings to their minimums. Connect a 68kΩ variable resistor across the E board CN4006 connector (with the variable resistor set to its maximum). Gradually lower the value of the variable resistor and check that the hold down circuit operates at a HIGH-VOLTAGE 		POSITION Imarked parts C4033, C4034, C4046, C4047, C4049, D4012, D4018, D4023, D4028, D4035, R983, R4022, R4046, R4047, R4048, R4053, R4054, R4057, R4059, R4060, R4061, R4077, R4079, R4086, R4091, R4092, R4097, R4098, R4100, Q4013, T4002, T4003 (FBT), E Board HV Block CN4006 HIGH-VOLTAGE Voltmeter	1	
 Voltmeter reading of 31.00 ± 0.30k VDC and that the rasters disappear. 5. When the hold-down circuit starts operating, switch OFF the power of the set immediately. 6. Remove the VR connected to CN4006 and measure resistance value. 7. Solder a resistor (METAL OXIDE 1/4W), whose resistor value is equivalent to measured above, to CN4006 in place of the VR. 8. Check Item 5 again. 		31.00 ± 0.30k VDC		

HV REGULATOR ADJUSTMENT (▶R983) 1. Receive DOT signal (PICTURE : 80%, BRIGHTNESS : 50%). 2. Turn off the power of the projector.			
 Remove MR983 from CN4006. Fix a 47kΩ VR onto CN4006 with solder, and set the resistor value at maximum. Turn on the power of the projector. Connect a digital voltmeter to IC4001 ⑤ pin. Slowly turn the 47kΩ VR that is soldered to CN4006, and gradually lower the voltage of IC4001 ⑤ pin down to 1.49VDC. Turn off the power of the projector. Remove the 47kΩ VR from CN4006, and measure the resistor value with the digital voltmeter. Put a resistor (metal oxide, 1/4W) that has same value as the measured resistor onto CN4006 and solder it. Turn on the power of the projector. Check if th evoltage of IC4001 ⑤ pin is between 1.46 nad 1.53VDC. Receive FULL WHITE signal (PICTURE : 80%, BRIGHTNESS : 50%). Turn off the power of the projector. G BOARD } +B MAX VOLTAGE CONFIRMATION The following adjustments should always be performed when replacing IC6002 and R6054. Supply 230VAC to with variable autotransformer. Input an entirely monoscope signal. Set the PICTURE control and the BRIGHT controls in to initial reset. Confirm the voltage of G BOARD CN6014 ① pin connecter is less than 134.50 ± 1.00VDC. If step 4 is not satisfied, replace IC6002 and R6054 repeat above steps. 	ignal	R983 PICTURE80% BRIGHTNEScenter	CN4006

6-5. SEMICONDUCTORS

BA7046F LM358D LM393PS NJM2234M NJM2235M NJM2240M NJM4558M μPC4558G2



CXA1315M HD74HC123AP HEF4046BT-T MC14046BDWR2 MC14053BCP MC74F163AM MC74HC163AF MC74HC4638F TDA4665T-T µPD4053BC



CXA1817S



CXA1855S



CXD2018Q



CXD2024AQ



CXP5068H-244Q CXP85460-005Q



CXP85112B-613S



CX20125



LA7856A PA0053B TDA2579B



LM358P LM393P ST24016CM1-TR/A μPC358C μPC393C



MB81C1000A-80PSZ



MC14066BF MC74F00M MC74F08DR2 MC74F08M MC74F74M MC74HC00AF MC74HC74AF



MN1382S



MSP3410 P83C652FBA-V3/AB517 TPU3040



NJM2058D



NJM78L05A



NJM78M12FA NJM7805FA PQ09RF2 TA7812S



NJM7905FA NJM7912FA



PM0002B



PQ05RF1



PQ12RF1



SAA4940H-T



SAA4951WP/V1-T



SAA7158WP-T



SBX1780-51



SDA9187-2XGEG SDA9188-3XGEG



STK392-040



STR81159A





S-80743AL-A7-S



TC4S66F



TDA4650/V4 TDA4780/V3



TDA6111Q



TDA7265



TDA8755T-T



TDA9141-N2C TDA9160A



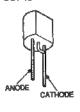
TL431CLP



µPC339C



μPC574J



ZA2970-26DTR



BF550



DTA114EKA-T146 DTA144EKA-T146 DTC114EKA-T146 DTC114EK DTC114EK DTC144EKA-T146 2SA1037K-T-146-QR 2SA1162G 2SB709A-QRS-TX 2SC1623-L5L6 2SC2412K-QR 2SC2712-YG



DTA144ESA



IRFI640 2SA1837 2SC4105-N 2SC4793



2SA1013-O 2SA1208



2SA1175-HFE 2SA1309A-QRS 2SC2785-HFE 2SC3311A-QRSTA 2SC3623A-LK



2SA1221-L 2SA1221-T-M 2SB733-34 2SB734-T-4 2SD774-34



2SA1301-O



2SB649A 2SC2688-LK



2SC2878-AB



2SC3997CA
MARKING SIDE VIEW



2SC4025MNPR



2SC4632LS-CB7



2SC4834P



BAS16 BBY40



DAN202K



DAP202K



DA204K 1SS226



D1NL20 EGP20G GP08D HZT33-02 RGP02-20EL-6394 RGP15GPKG23 1SS83



D1NS4 D1N20R RD12ES-B2 RD13ES-B2 RD18ES-B2 RD2.4ES-B2 RD20ES-B2 RD27ES-B2 RD3.3ES-B2 RD33ES-B1 RD39ES-B2 RD4.3ES-B2 RD5.6ES-B2 RD7.5ES-B2 RD8.2ES-B2 RD9.1ES-L RD9.1EW RM11C 1SS119-25 155133



D10SC4MR



D10SC4M D10SC6M D8LC40



D10SC6MR



D10XB60S RBA-4068



D2L40-TA



ERC06-158 ERC91-02 S2LA20F



ERC38-06 V19E



ERD08M-15



MA110



MA3024-TX MA3033-L MA3047-TX MA3051M MA3075M MA3130 RD13M-B2 RD2.0M-B2 RD4.7M-B2 RD5.1M-B2 RD7.5M-B2



SC802-06

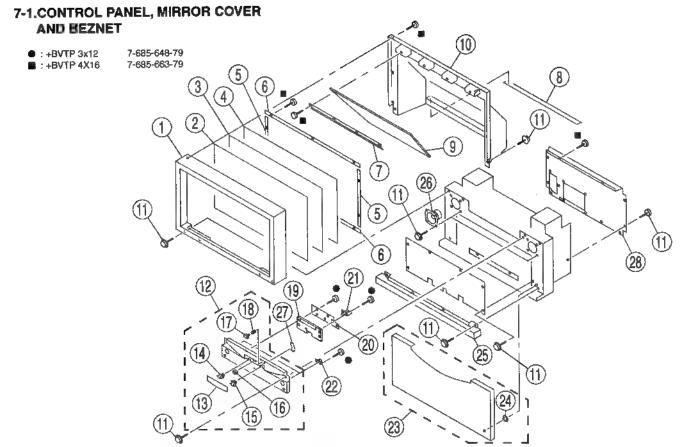


S1WB60B



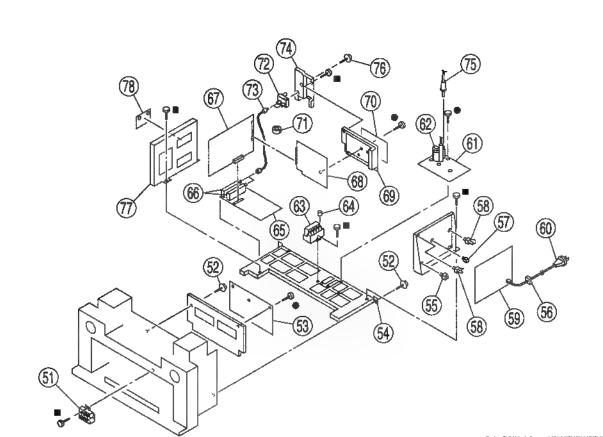
TLR124





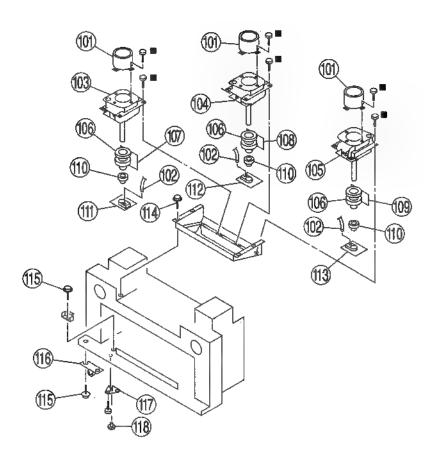
7-2. CHASSIS

●:+BVTP 3x12 7-685-648-79 ■:+BVTP 4X16 7-685-663-79



7-3. PICTURE TUBE

■: BVTP 4X16 7-685-663-79



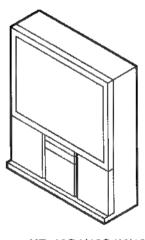
SERVICE MANUAL

RX-1E CHASSIS

MODEL	COMMANDER		CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KP-46S4	RM-831	AEP	SCC-N24A-A	KP-53S4	RM-831	AEP	SCC-N24B-A
KP-46S4K	RM-831	OIRT	SCC-N25A-A	KP-53\$4K	RM-831	OIRT	SCC-N25B-A
KP-46S4U	RM-831	UK	SCC-N26A-A	KP-53S4U	RM-8 31	UK	SCC-N26B-A



RM-831



KP-46S4/46S4K/46S4U KP-53S4/53S4K/53S4U







SPECIFICATIONS

Television system

B/G/H,D/K,I,L

Colour system

PAL/SECAM and NTSC 3.58/NTSC4.43

(VIDEO IN)

Channel coverage

See " Receivable channels and channel

displays " at the bottom.

Projected picture size 116cm (46 inches) Terminals

Rear

133cm (53 inches) Center speaker input terminals,

2 terminals

O+ (L,R), audio outputs - phono jacks

(variable)

- 1, 21-pin Euro connector (CENELEC standard)

-inputs for audio and video signals

- inputs for RGB

- outputs of TV audio and video signals

- inputs for audio and video signals

- inputs for S Video

- outputs for audio and video signals

(selectable)

-8 2, S video inputs - 4 pin DIN • (L,R), audio inputs - phono jacks

→ 4/ - 4 4. 21-pin Euro connector

- inputs for audio and video signals

- inputs for S video

- outputs for audio and video signals (monitor out)

Front

- (L, R), audio outputs - phono jacks (fixed) - 3, video input-phono jack

- 4 yideo inputs - 4 pin DIN

(L, R), audio inputs - phono jacks

S- S video outputs 4-pin DIN (monitor out)

- (L, R), audio inputs-phono jacks

- 3, S video input-4-pin DIN

O, headphone jack - stereo minijack

Sound output 2 x 30W (music power)

2 x 15W (RMS)

Power consumption 225W

Dimensions(WxHxD) KP-46S4K: 1104 x 1267 x 512 mm

KP-53S4K: 1164 x 1335 x 650 mm

Weight KP-46S4K: 79kg

KP-53S4K: 90kg

Supplied accessories RM-831 Remote Commander

One IEC designation R6 battery

Other features Digital comb filter (High resolution)

PIP (Picture-in-picture)

FASTEXT

NICAM (B/G, L, I) **B/G STEREO** D/K STEREO

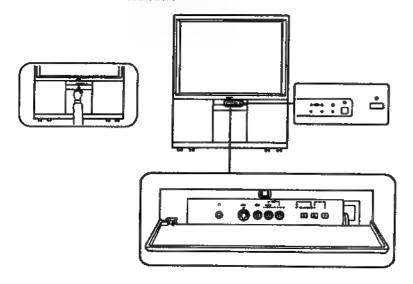
Design and specifications are subject to change without notice.

Receivable Channels and Screen Displays

_	Receivable channels	Indication on the screen
PAL B/G/H	E212 2169	C02 C03 C04C12 C21C69
CABLE TV (1)	\$141	S01 S02S41
CABLE TV (2)	S01S05 M1M10 U1U10	\$42\$46 \$01\$10 \$11\$20
ITALIA	ABCDEFGHH1H2 2169	C11C69
SECAM D/K	R01R12 R21R60	C02C12 C21C60
SECAM L	F2F10 F21F69	C01C12 C21C69
PAL I	B21 B68	C21C68

This section briefly describes the buttons and controls on the TV set and on the Remote Commander. For more information, refer to the pages given next to each description.

TV set-front



Symbol	Name	Refer to page
Φ	Main power switch	7, 13
Ó	Standby Indicator	13
A-CD-B	Stereo A/B indicators	15
Ω	Headphones jack	22
-®1,-©1,- ⊚1	input jacks (S video/video/audio)	22
Freed	Function selector (Programme/volume/input)	14
-/+	Adjustment buttons for function selector	14

TWToletent operation of the continuous of the co

TV/Teletext operation

Note The SAT button does not

T 47 T eletext operation		
Symbol	Name	Refer to pag
4	Mute on/all button	14
0	Standby button	13
Ď	TV power on/TV mode selector button	13
ø	Teletest button	14
Ð	Input mode selector	14
(3-	Output mode selector	23
1,2,3,4,5,6, 7,8,9,and 0	Number butters.	13
+-	Double-digit entering button	- 13
C	Direct channel entering bullion	10
44	Volume control button	13
PROGR+/-	Programme selectors	13
66	Telefext page access bullons	19
•	Picture adjustment button	15
4,	Sound adjustment button	16
G .	On-ecrean display button	14
0	Teleteid hold button	19
0	Time display button	14
	Fastext buttons	18

Simple side

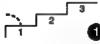
Fill-Function side
PIP (Picture-in-picture) operation

Symbol	Neme	Refer to page	
G	PIP on/oil button	17	
t	PIP source selector	17	
æ	Swap button	17	
8	PIP position changing bullon	17	

Symbol Name Refer to page MENU Alenu on/off button 7 Δ-y/∇- Select buttons 7 OK OK(confirmingibution 7 ← Sack button 7

Video operation		
Symbol	Name	Refer to page
VTR1/2/3, MOP	Video equipment solector	24
44PPB Beo PROGR+/-	Video equipment operation buttons	24

Step 1 Preparation



Note: Always remembers to dispose of used

baitades in ex-

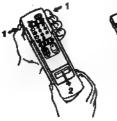
• Check the supplied accessories

When you've taken everything out of the certon, check that you have these items:





2 Insert the battery into the Remote Commander







Check the correct polarities.

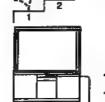


Field the outside cover making sure that the Full-Function side is visible to use the menu in step 2.

© Connect the aerial

Pit an IEC serial connector attached to 75-ohns countil cable (not supplied) to the 'Y socket at the mer of the TV.

Step 2 Adjusting Colour Registration (CONVERGENCE)

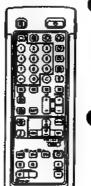


(D) presin power switch)

Once you have set up the TV, you can choose the tanguage of the menu. Then you should converge the three colour toyens (red, green, and blue).

Before you begin

- Check that the Full-Function side of the Remote Commender is visible.
- Locale Menu operation buttons on the Remote Commender. They are shaded in the flustration at the left.



Choose a language

- Deprese © (main power awtich) on the TV unit.
 The TV will switch on. If the standby indicator on the TV is it, prese
 or a number builton on the Remote Commander.
- 2 Press MEMJ.

The LANGUAGE menu appears. (See Fig. 1).

- Select the language you want with ∆ + or ∇ and press OK.
- 4 Press to return to the main menu.

2 Display the menu

Press MENU.

The main menu appears. (See Fig.2)



3 Converge the red, green and blue lines

- Select "CONVERGENCE" with △ + or ∇-- and press Oic. The CONVERGENCE menu appears. (See Fig. 3.)
- Select "the fine" you want to adjust with △+ or ∇−.
 Key to line adjustment symbols:
 I (red vertical left/right adjustment)
 —fred horizontal up/down adjustment)
 - 1 (bive vertical leit/right adjustment) – (bive horizontal – up/down adjustment)
- 3 Press OK. The line to adjust is enlected.
- Prest △+ or ∇− to converge the selected line with the centre green line and press OK.

3.00		
To	move up (horizontal line)	Press Δ+
To	move right (vertical line)	
To	move down (horizontal line)	Press ∇+
To	move left (vertical line)	

- Fepeat steps 2 to 4 to adjust the other lines, until all the lines have overlapped to form a white cross. (See Fig. 4.)
- 8 Press MENU to return to TV picture.





GB

-



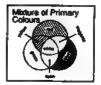
-



Fig. 3

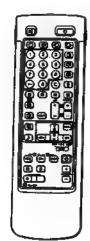


Pb. 4



Step 3 Tuning in to TV Stations





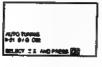
To go back to the main Keep pressing -...

To stop autometic channel preses Press - on the Resente Commender.

- · After pressiting the eutometically, you can check which channels are stored on which ргодгачина роздіола
- You can exchange the Programme positions to have them account on exteen in the order you like. For details. Ann "Exchanging the Programme Positions on page 10.

You can preset the channels (up to 100 channels) by choosing either the automatic or manual method.

The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you only have a few channels and want to preset channels one by one.





Preset Channels Automatically

- Press MENU to display the main menu.
- 2 Select "PRESET" with △+ or ∇- and press CK. The PRESET menu appears. (See Fig. 5.)
- Select "AUTO TUNING" with △+ or ∇+ and press CIC. The AUTO TUNING manu appears. (See Fig. 6.)
- 4 Select the programme with 4- and enter the digit numbers from which you want to start precetting.
- 6 Press CK. Seek I if necessary the TV broadcast system with Δ_{Ψ} or V- and press OK. (B/G for western European countries, D/K for eastern European countries, L for France and I for the United
- # Using $\Delta +$ or $\nabla -$, select C (to start presetting regular channels) or S (to start presetting cable channels) and press OK. The automatic channel presetting starts. When presetting is finished, the preset menu reappears. All available channels are now stored on successive number buttons. If you want to change to another broadcasting system, repeat MMps 3 to 5.
- 7 Press MENU to return to TV picture.



Life this method if there are only a lew channels to your area to present or if you want to preset channels one by one,

If you have made a

Press - to go back to

the previous position.

Tereture to the male

Keep preceing -.

- 1 Press MEMU to display the main meau.
- 2 Select "PRESET" with △+ or ∇- and press OK. (See Fig. 7.)
- 3 Select "MANUAL TUNING" with $\Delta +$ or $\nabla -$ and press CK. The MANUAL TUNING menu appears. (See Fig. 8.)

Preset Channels Manually

- 4. Using Δs or $\nabla -$, swiect the programme position to which you want to preset a channel, and press QK, You can also select the programme position with the number buttone (e.g. for programme 24, press -/---, 2 and 4).
- 5 Select, if necessary, the TV broadcast system (B/G for western European countries, D/K for eastern European countries, Lifer France and I for the United Kingdom) with $\Delta + \sigma \nabla -$. Then press
- Φ . Using $\Delta +$ or $\Psi +$, select C (to start presetting regular channels) or S(to start presetting cable channels) and press OK.
- ? Press $\Delta + \text{or } \nabla \text{until the channel you want appears on the screen.}$ You can also select the channel directly using the number buttons. Press C tonce for VHF/UHF channels, twice for cable TV channels), then the number buttons (e.g., for channel 5, press D Then press OIC.

To preset other channels Repeat steps 4 to 7.

To return to TV picture Press MENU,

'GB'

PRESET PARTO TUNNES
PARTO TUNNES
PROSEN ENDIANCE
PROSEN ENDIANCE
SELECT 2.3 AND PRESES (TE)

Fig. 7

MANUAL TURNING BAR (SI SYS: 0/0 CH: CCS LASD. (STAND PAULS CO SDACT II AND PAULS CO

O)

This section shows you additional presetting functions such as exchanging or skipping programme positions, captioning a station name, and manual fine-tuning.

You can skip this section, if not needed.

Before you begin

- Check that the Full Function side of the Flemole
- Commender is visible.
- Locate the Menu operation buttons.







If you have made a Press - to go backto the previous position To go back to make

Keep preceing +.

Exchanging Programme Positions

With this function, you can exchange the programme positions to a preferable order.

- 1 Press MENU to display the main manu.
- Select "PRESET" with A+ or V- and owen OK. The PRESET menu appears.
- Select "PROGRAMME EXCHANGE" with $\Delta + \text{ or } \nabla \text{ and press$
 - The PROGRAMME EXCHANGE many appears. (See Fig. 8.)
- 4 Using △+ or ∇-, select the programme position you want to exchange with another and press OK.
- 6 Using $\Delta +$ or $\nabla -$, select the programme position to be exchanged and press OK. Now the two programme positions have been exchanged.
- Repeat steps 4 and 5 to exchange other programms positions.
- 7 Press MEMU to return to TV picture.

Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset. Use the buttons on the Full-Function side of the Flemote Commander.

- Press C on the Remote Commander for regular channels, or bridge To get cable channels.
- The indication "C" ("S" for cable channels) appears on the screen,
- 2 Enter the double-digit channel number using the number bullions (e.g. for channel 4, first press 0, then 4). The channel appears.

However, the channel will not be stored.



PROGRAMME EXPLUSION POR BY BUTTON TO THE PROGRAMME PROGR

HOVE PROT TO PR--

TO MAKE THE

Skipping Programme Positions

You can stdp unused programme positions when selecting programmes with the PROGR +/- buttons. However, the stdpped programmes may still be called up when you use the number

- 1 Press MENU to display the main menu.
- Select "PRESET" with $\Delta + \text{ or } \nabla \text{ and press QK.}$ The PRESET menu appears.
- Select "MANUAL TUNING" with $\Delta + \text{or } \nabla \text{and press CKC}$ The MANUAL TUNING menu appears. (See Fig.11.)
- 4 Using △+ or ∇-, select the programme position which you want to skip and press OK.
- Freak △+ or ∇- until *-- appears in the SYS position. (See Fig.

If you have made a Press - to go back to

the previous position. To go back to main Keep preseing -...

When you select programmes using the PROGR +/- buttons, the programme position will be slopped. 7 Repeat steps 4 to 8 to step other programme positions.

- 4 Price MENU to return to TV picture.

MANUAL TURNS Captioning a Station Name

You can "name" a channel using up to five characters flatters or numbers) to be displayed on the TV screen (e.g. BBC1). Using this function, you can easily identify which channel you are watching.

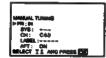
- 1 Press MENU to display the main menu.
- 3 Select "PRESET" with ∆+ or ∇- and press CIK. The PRESET menu appears.
- Select MANUAL TUNING with &+ or V- and grown OK. The MANUAL TUNING menu appears.
- 4 Select "PR" with ∆+ or ∇- and press OK.
- 5 Select programme position you want to caption with $\Delta + cr \nabla -$ and press OK
- Select "LABEL" with △+ or ∇- and press OK.
- 7 Select a letter or number with △+ or ∇- and press CK. Select other characters in the same way, if you want to leave an element blank, select - and press OK, (See Fig. 13.)
- 8 Repeat stops 4 to 7 to caption names for other channels.
- 9 Press MENU to return to TV picture.





GB

Pa. 11



Pin. 12

PRIOR SYS: 0/G DN: CsG DN: CsG AFF: DN SELECY 23 AND PRESS DE

10

THE HARDEN AS

To reactivate APT

beginning and select

Repeat from the

ON in step 7.

(incomello fine tuning)

Manual Fine-Tuning

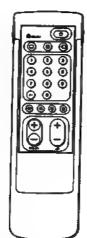
Normally, the AFT (automatic line-tuning) is already operating. However, if the picture is distorted, you can use the manual finatuning function to obtain batter picture reception.

- 1 Press MENU to display the main menu.
- Select "PRESET" with △+ or ∇- and press OK. The PRESET menu appears.
- Select "MANUAL TURING" with △+ or ∇- and press CK. The MANUAL TURING many appears.
- 4 Select "PR" with Δ+ or ∇- and press OK.
- 5 Select programme position you want to manually fine-tune with △+ or ∇− and press OK.
- Solect "AFT" with $\Delta +$ or $\nabla -$ and press OIC.
- 7 Select "OFF" with ∆+ or ∇- and press OK. (See Fig. 14.)
- Fine-tune the channel with M→ or V→ no that you get the best TV reception. As you press the cursor buttons, the frequency changes from – 126 to + 127.
- After fine tuning, press CK,
 Now the fine-tuned level is stored.
- 10. Repeat steps 4 to 9 to fine-tune other channels.
- 11 Press MENU to return to TV picture.

MANUAL TUNING
PRICE
PRICE
PRICE
CHI GRE
LAFE OFF

Fig. 14

Watching the TV



If no ploture appears when you depress 0 on the TV and if the stendby indicator on the TV is if, the TV is in stendby motion. Press 0 or one of the number button to switch t on.

This section explains the basic functions you use while watching TV. Most of the operations can be done using the simple side of the Remote Commander.

Switching the TV on and off

Switching on

Operating Instructions

Depress © (main power wellch) on the TV unit.

Switching off temporarity

Press than the Remote Commander.
The TV enters standby mode and the standby indicator on the front of the TV lights up.

To switch on again

Press C), PROGR 4/-, or one of the number building on the Remote Commander.

Switching off completely

Depress @ (main power switch) on the TV unit.

Selecting TV Programmes

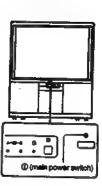
Prises PROGR +/- or press the number buttons.

To select a double-digit number

Press +, then the numbers. For example, if you want to choose 23, press +, 2, and 3.

Adjusting the Volume

Press 4 4/-.



Operating the TV Using the Buttons on the TV

With the -/- buttons on the TV, you can saled programmes, adjust the volume, and select video input sources.

To switch on the TV from the standby mode Press the -/+ buttons.

To reset picture and sound controls to the factory preset level (RESET function)

Press the -/+ buttons simultaneously.

To select TV programmes

Press Pages) repeatedly until the programme number appears, then press the -/+ button to select.

To adjust the volume

Press. Fig. b repeatedly until the ZIIII appears, then press the -/ + button to actual. (See Fig. 15.)

To select video input sources

Press Fig. b repeatedly until the © (video input Indication) appears, then press the 4's button to select. Each pressing the button, the indication changes as follows.



é 0 000

Fig. 18

셂

Alter the video input source is selected, the ARM appears. Press the -/- button to adjust the volume. (See Fig. 16.)

- Press @ to view the teletext.
- buttons to select a page. For fested operation, press one of the coloured buttons. For both operations, press @ (PAGE+) for the next page or (PAGE -) for the preceding page.

2 To go back to the normal TV picture, press C.

Displaying the on screen indications

- Press (3) once to display all the indications.

 Press (3) again to make the indications disappear.

Muting the sound

Press .

To resume normal sound, press≪ again.

Press ©. This function is available only when teletext is broadcast. To make the time display disappear, press @ again.

Adjusting and Setting the TV Using the Menu



If you have made a

Press - to go back to

the previous position. To go back to the rusin

Hus is only available for

The audio level and the

dual sound mode output

from the G- jack on the

rear correspond to the Headshore VOLUME

and DUAL SOUND eatlings.

When wetching a

videe input picture You can select DUAL SOUND to change the

NTSC colour systems.

Note on LINE OUT

Keep pressing 4-

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste. You can also select due! sound (bilingue) programmes when available or adjust the sound for listening with the headphones.

1 Press @ (for picture) or .): (for sound) on the remote Commander.

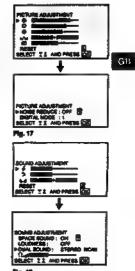
Press MENU and select "PICTURE" or "SOUND," then press CK.
The PICTURE ADJUSTMENT or SOUND ADJUSTMENT manu (See Fig. 17 or Fig. 15.)

 $Z = Using \Delta + or \nabla -$, select the item you want to adjust and press CK. To move up/down:

From Exposition, press V- to move down. From \blacksquare position, press $\triangle +$ to move up.

El monte nest page. II means previous page.

- Adjust the setting with △+ or ∇-and press OK. For the effect of each control, see the table below.
- 4 Repeat steps 2 and 3 to actual other items.
- 5 Press MENU to return to TV picture.



Effect of each control

PICTURE ADJUSTMENT	Effect
(contrast)	Loca management More
(brightness)	Darker guesse Brighter
(colour)	Loss games More
Su (Pauli)	Greenish susum-susum Reddish
D (sharpness)	Softer same—— Sharper
ESET	Resets picture to the factory preset levels.
IOISE REDUCE	OFF: Normal ON: When reducing the picture noise
NGITAL MODE	1: Line Flicker reduction on.
	2: Line Flicker reduction off,
BOUND ADJUSTMENT	Blact
(PidenT)	Lass comme—— More

	······································
SOUND ADJUSTMENT	Effect
4 (Trebie)	Lass comme—— Nigre
2(Base)	Locs www More
(Balance)	More left wwwwww. More right
RESET	Pleasts sound to the factory preset levels.
SPACE SOUND	OFF: Normal ON: Obtain acoustic sound effect.
LOUDNESS	OFF: Normal ON: When listening to low volume sound,
DUAL SOUND*	A: left channel : B: right channel Stereo mono
	STEREO MONO
	The selected mode of the A-CD-B indicator on the TV lights up.
(Fisadphones)	Lecs 2 -

*When receiving a NICAM programme

NICAM stereo/monaural - STERED NICAM -- MONO

NICAM blingue

NICAM A → NICAM B → MOND



For details of the telebook

For details of the victors

operation, refer to



Watching teletext

- 2 For teletest operation, enter a 3-digit page number with the number
- 2 To go back to the normal TV picture, press ().

Watching a video input picture

Press - repeatedly until the desired video input appears.

More Convenient Functions

Use the Full-Function side of the Remote Commander.

Displaying the time

PIP (Picture In Picture)

6

0000

PATURES

Using the SLEEP TIMER

You can select a time period after which the TV automatically meliches into standby mode.

- 1 Press MENU to display the main menu.
- Select "FEATURES" with △+ or ∇- and group OK. The FEATURES menu appears.

To pullet of the little Select OFF" in step 3.

To check the Press Ct.

Select "SLEEP TIMEP" with 25 or V- and press OK. (See Fig.

The time period option changes colour.

Select the time period with $\Delta + \text{ or } \nabla -$ The time period changes as follows: OFF → 0:30 → 1:00 → 1:30 → 2:00

5 After selecting the time period, press CK. The oursor moves back to the left margin and the timer starts.

One minute before the TV switches into stanciby mode, a message is displayed on the screen.

6 Press MENU to return to TV picture.

FEATURES 1

If you try to select a programme that has been blocked

the bleck TV screen.

The message "LOCKED" appears on

PARENTAL LOCK

You can prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unaultable.

- Select the TV programme which you want to block.
- 2 Press MENU to display the main menu.
- 3 Select "FEATURES" with △+ or ∇- and press CIK. The FEATURES menu appears.
- 4 Select "PARENTAL LOCK" with Δ+ or ∇- and press OK.
- 8 Select "ON" with $\Delta +$ or $\nabla -$ and press CIK. (See Fig. 20.)
- Press MENU to return to TV picture.

Cancelling PARENTAL LOCK

- 1 On the PARENTAL LOCK menu, select "OFF" with △+ or ∇-,
- 2 Press OK.

SOLACT II AND PARES TO

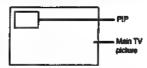
SELECT II AND HERE

Fig. 20

e e e e 3 PEATURES

ELECTIMEN: OFF
PRACHITAL LOCK: ON

Hate RGS input source cannot be displayed in With this function you can display a "PIP acreen" (small picture) within the main TV picture. In this way you can watch or monitor the video output from any connected equipment (for example from a VTR) while watching TV or vice versa. For information about connection of other equipment, refer to page 22.



Switching PtP on and off

The PIP screen will be displayed. The PIP picture will come from the source chosen when the TV was fast used.

To Bullion PIP off Press (3 again.

Selecting a PIP source

Press t.

The symbol I will be displayed at the bottom, left-hand comer of the ecreen.

2 Press - repeatedly until the desired PIP source is indicated fa.o. TV, AV1, AV2, YC2, AV3, YC3, AV4, YC4).

If no video source has been connected, the PIP picture will be

Swapping screens

Press (7)

The main screen will switch the picture with the PIP screen.



- . If a TV programme is on the PIP screen and a video source on the main picture, and you want to change channels, first press I and then the programme number buttons or PROGR +/-.
- Swapping screens takes about 2 seconds after pressing
- . After awapping acreens if the colour systems of the main and PtP pictures are different, the PtP picture first appears In black and white and then in colour.

Changing the position of the PIP

Press @ repeatedly to change the position of the PIP acreen. within the main screen. There are four different positions available,



6

GB

Teletext

Ethilis V

Displaying Frame-by-frame Pictures (PHOTO)

- Press MENU to clapley the main menu.
- Select FEATURES with △+ or ∇- and press Cit. The FEATURES menu appears. (See Fig. 21.)
- 3 Select "PHOTO" with △+ or ∇− and press OK. (See Fig. 22.) The presst programme is displayed in nine separated screen is: sequence. (See Fig. 23.)

To restore the normal picture Press CK and MENU.



Plg. 21

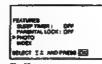


Fig. 22



Plg. 35

Teletent errors may occur if the broadcasting eignals are weak.

With the aimple side of the flamote Commander You can switch lebeled on and off, operate Fasters, and directly select page numbers.

Mote Featest operation is only possible, if the TV station broadcasts Featest signals. Information pages such as weather reports or news at any time you want. For advanced intelled operation, use the buttons on the Pull-Function side of the Remote Commander.

TV stations broadcast an information service called Teletest via

the TV channels. Taletest service allows you to receive various

Direct Access Functions

Switching Teletext on and off

the information line at the top of the acreen.

- Select the TV channel which carries the teletast broadcast you want to watch.
- Press © to evilicit on teletext.
 A teletext page will be displayed (usually the index page).
 If there is no teletext prosecues, "No text available" is clinolayed on

To evaluate telesteact off

Press O.

Selecting a teletext page

With direct page selection

Use the number buttons to input the three digits of the chosels page number.

If you have made a mistake, type in any three digits. Then re-union the correct page number.

If the requested page is not arrelable at that moment, a message will be displayed.

Accepting next or preceding page

Press (PAGE+) or (PAGE-).
The next or preceding page appears

Superimposing the teletext display on the TV programme

- . Press @ once in teletext made or twice in TV mode.
- Press @ again to resume normal telefext reception.

Preventing a teletext page from being updated

- Press © (HOLD). The HOLD symbol 'Ell' is displayed on the information line.
- Press © to resume normal teletent reception.

Using Fastext

With Fastist you can access pages with one key stroke. When a Fastist page is broadcast, a colour-coded menu will appear at the bottom of the access. The colours of this menucorrespond to the red, green, yellow and blue buttons on the Remote Commander.

Press the corresponding coloured button on the Remote Commender which corresponds to the colour-coded menu. The page will be displayed after a few seconds.

Checking All the Preset Programmes (INDEX)

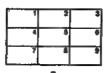
- 1 Press MENU to display the main menu
- 2 Select "FEATURES" with △+ or ∇- and press OK, The FEATURES menu appears. (See Fig. 24.)
- Select TND/EXT with △+ or ∇− and press CK. (See Fig. 25.) The nine presst programmes appear in the separated screen in sequence, switching the picture for each econds. After all the nine programmes are displayed, each sequence switch the ploture with the sound for each five seconds. Press △+ also switches to the next nine programmes. (See Fig. 26.)

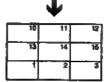
To restore the normal picture Press CK and MENU. MENUTY PROTURE SOUND PROTURES CONVENIONERS PROTURES CONVENIONERS PROTURES PARTIES FOR THE PROTURE SOUND PROTURE SOUND PROTURES FOR THE PROTURE SOUND PROTURE

Pip.24



Fig. 85





19.26

6 0000 0000 0000 0000 0000 0000 66.60 9

Some of the features may not be availab depending on the

Using the Teletext Menu

This TV is provided with a menu-guided teletest system. When teletest is switched on, you can use the many buttors to operate the telelant menu. Select the telelant menu functions in the following way:

- Press MENU. The menu will be superimposed on the telelect display. (See Fig. 27.)
- 2 Using III- or ∇-, select the feletext function you want and prese

INDEX

The index will give you an overview of the contents of the telebox and the page numbers.

ENLARGING

selected the function, an information line TOP/BOTTOMFULL will be displayed. (See Fig. 28.)

To enlarge the upper half with "TOP", salect "TOP" and hold down the V-. To onlarge the tower half with "BOTTOM," select "BOTTOM" and hold down the A+. The picture can be scrolled up to 12 steps in each direction. Press OK for "FULL" to resume the normal alza.

Press @ to resume normal telefact reception.

TEXT CLEAR

After selecting the function, you can watch a TV programme while waiting for a teletest page to be displayed. (See Fig. 28.)

Press @ to resume normal teletaut reception.

SUBTITLES

Your lefelext service will inform you it a TV programme is subtities. After having selected the function the subtities will be displayed.

REVEAL

Sometimes pages contain concealed information, such as enewers to a quiz. The REVEAL option lets you disclose the Information. After having selected the function, conceeled information will be displayed.

By choosing REVEAL again on the monu, the conceeled information will be canceled.

Press @ to resume normal teletext reception.



Fig. 27





Fig. 30

TIME PAGE

Press OK to select

"OFF" for the TIME

To concel the request

Select SUBPAGE and

Note: TIME PAGE" and

May not be medial

depending on the

SUSPAGE MALPUS

press QK.

The request.

PAGE esting to cancel

Your leistest service will inform you. If a time coded name is: evaluable. You may have a page (e.g. an alarm page) displayed at a certain time.

- 1 Using △+ or ∇-, select *ON.* Press OK. The TV programme you were watching before you selected TBAE PAGE is regioned. An information window will be displayed at the bottom of the page.
- 2 To select the desired page, enter three digits for the page number (e.g.452) using the number buttons and press OIC.
- 3 To select the desired time, enter four digits for the desired time. (e.g. 1800) using the number buttons and press OK. The selected time is displayed at the top in the left-hand contex. At the requested time, the page will be displayed. Press @ to resume normal telesaid mode.

SUBPAGE

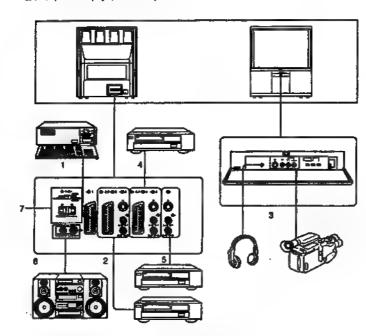
You may want to select a persoular telesent page from several autopages which are rotated automatically. Asser having selected the function, an information the will be displayed.

To select the deelect subpage, order four digits using PROGR +/or the number bullions (e.g. enter 0002 for the second page of a sequence).

Connecting and Operating Optional Equipment

Connecting Optional Equipment

You can connect optional audio-video equipment to this TV auth as a VCP, video disc player, and stereo system.



Move the VCR away Norm the TV.
S/video imput
(Y/C input) Video signate may be separated into Y
(luminance or brightness) and C

If the picture of the

sound is distorted

To connect a VCR saling the T terminal Connect the serial output of the VCR to the serial terminal T of the

We reconvenent that you tune in the video signal to programme number 10. For details see Treest channels.

menusity on page 3.

Video signate may be separated into V (suminance or brightness) and C (chrothinance) signate. Separating the Y and C signate prevent than from interleting with one another, and therefore improves picture quality (especially turninance). This TV is equipped with 3 S Video imput jacks through which these separated signate can be input directly.

When connecting a monaunal VCR.
Correct only the white --> jack to both the TV and VCR.

Acceptable input signal Available output signal 1 Normal audio/video and RGB signal Video/audio from TV tuner 2 Normal audio/video and S video signal Video/audio from selected source 3 Normal audio/video and S video signal No outputs 4 Normal audio/video and 5 video signal Videofaudio displayed on TV acreen (monitor out) 5 No inputs Sivideo/audio signel displayed on TV screen (monitor out) . 6 No Inquie Audio signal (variable) Centre apealor input. No outputs Select to CENTRE when TV set's speakers are used for external amplifier (e.g. Dolby For normal operation, switch position is MAIN.



~©1 connector always outpute the audio and video signals from the 'V' aertal

C3-47-C34 consister shreys sulputs the audio and video signals which you are currently wetching on the TV screen (i.e. moniter culput).

Selecting Input

This section explains how to view the video input pisture (of the video source connected to your TV).

Press - repeatedly to select the input source.

The symbol of the selected input source will appear. (See Fig. 30.) To go back to the normal TV picture

Press O.



ymbol	input signal
- €1	AudioAideo input through the -@1 connector
Ð	Audio/RGB input through the -@ 1 connector
-602	Audiphides input through the 3°2/ -602 connector
-602	Audio/S video input through the @+2/ -@2 or -@2 connector (4-pin connector)
-E3	AudioMdeo Input through 3 and 3 on the front
-6 3	Audio/5 video input through the -⊕3 (4-gin connector) and -€3 connectors
-Đ4	Audio/video input through the @-4/ -@4 connector
	Audio/S video input through the @## / -@4 or -@4 connector(4-pin connector)

You can also select the input mode using the fragme and -/+ buttons on the TV. In this case, first select -{D}, and then prays -/+ buttons to select the input.

Selecting Output from the 3-2/-32 Connector

You can select the output signal from the @-2/-@2 connector. The @-2/-@2 connector outputs the input signals from the other connectors as indicated below.

Press G-repeatedly to select the output.

The symbol of the selected output source appears. (See Fig. 31.)



Symbol	Output signal of the (3-2/-(2)2 connector
10	Audio/video signal from the
2 G+	Audio/video signal from the @+2/4@2 connector
2 ∰+	Audio/S video signal from the @-2/-@2 or -@2 connector (4 pin)
3 G+	AudioAideo signal from the -€3, -€3 connectors
3 (8+	Audio/S video signal from the®3,⊕3 connectors
4 G+	AudioAideo signal from the G+4/ -®4 connector
4 🕮 -	Audio/S video signal from the @+4/-@4 or -@4 connector (4 pin)
TVG-	Audio/video signal from the 'V' serial terminal

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most of Sony remote-controlled video equipment such as: beta, 8 mm and VHS VCRs and video disc players.

Tuning the Remote Commender to the equipment

\$ Set the VTR 1/2/3 MOP selector according to the equipment you want to control:

VTR 1: Bata VCR VTR2: 8 mm VCR VTR3: VHS VCR MDP: Video disc player

2 Use the buttons indicated in the Buttration to operate the additional equipment.

If your vides equipment is furnished with a COMMAND MODE selector, set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Flemole Commander.

If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.

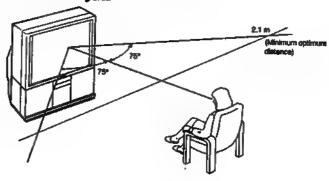
When recording When you use the & (word) buildin, make sure to press this building and the one to the right of it simultaneously.

Optimum Viewing Area For the best picture quality, try to position the

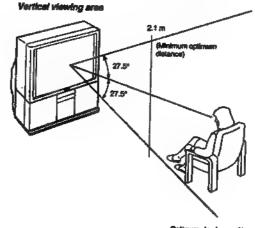
For the best ploture quality, by to position the projection TV so that you can view the screen from within the areas shown below.

Horizontal viewing area

For Your Information



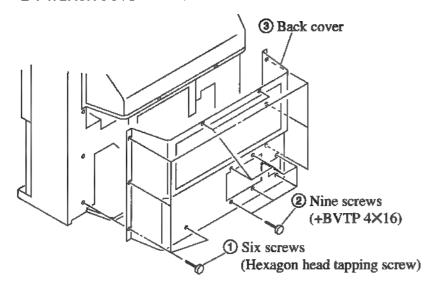
Optimum viewing position



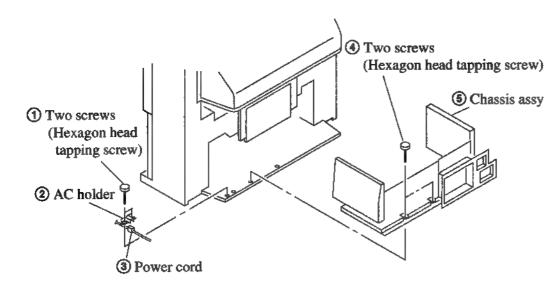
Optimum viewing position

SECTION 2 DISASSEMBLY

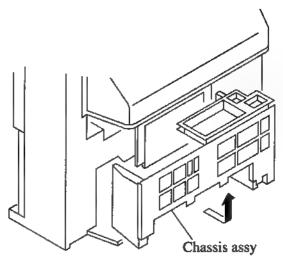
2-1-1. BACK COVER REMOVAL



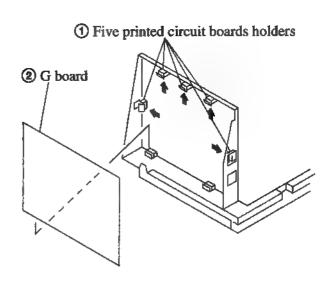
2-1-2. CHASSIS ASSY REMOVAL



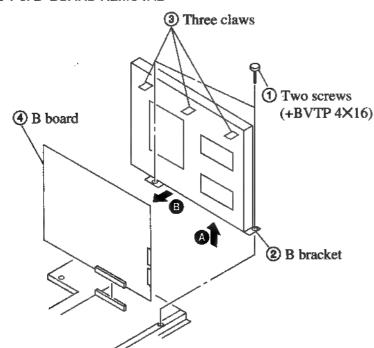
2-1-3. SERVICE POSITION



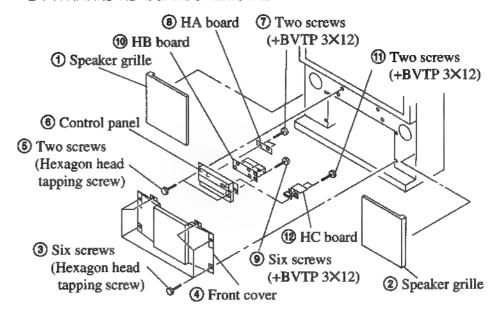
2-1-4, G BOARD REMOVAL

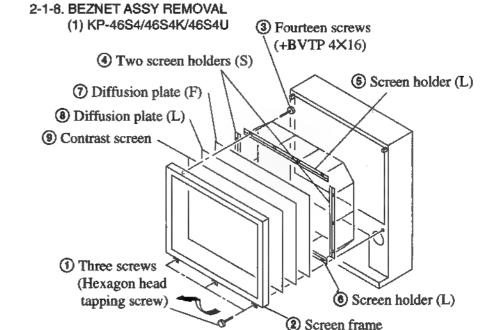


2-1-6. B BOARD REMOVAL

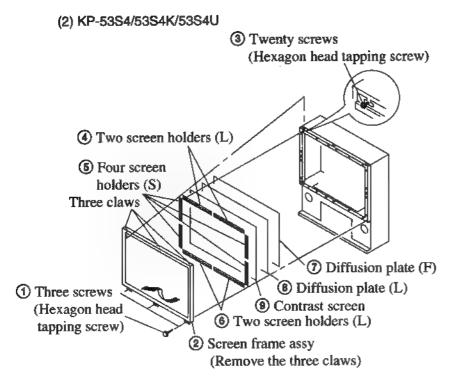


2-1-7, HA AND HB BOARDS REMOVAL

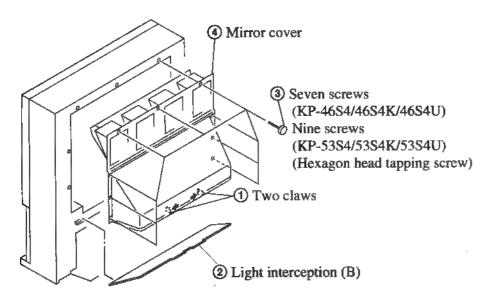




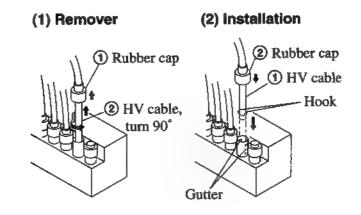
-16-



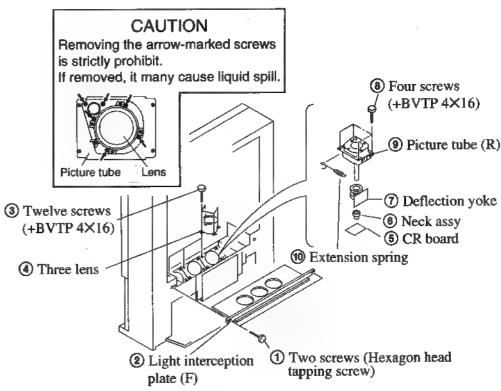
2-1-9. MIRROR COVER ASSY REMOVAL



2-1-10. HIGH-VOLTAGE CABLE INSTALLATION AND REMOVAL

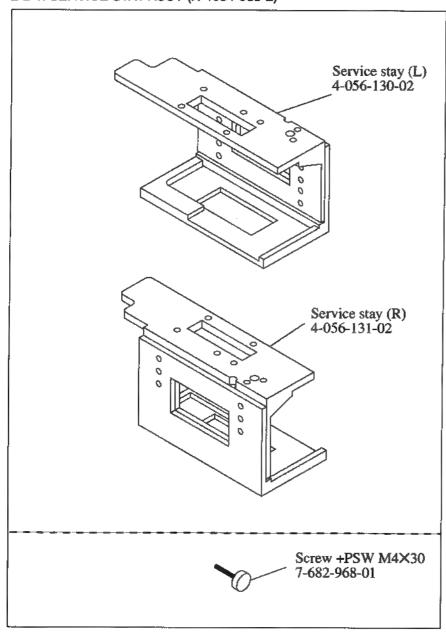


2-1-11, PICTURE TUBE REMOVAL

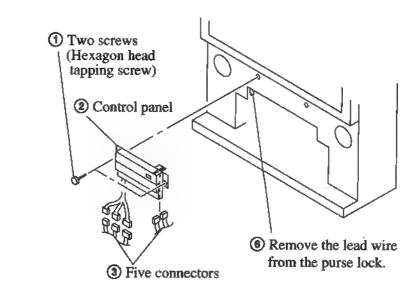


2-2.SERVICE STAY ASSY HOW TO USE AND CARRY BACK SERVICE STAY ASSY

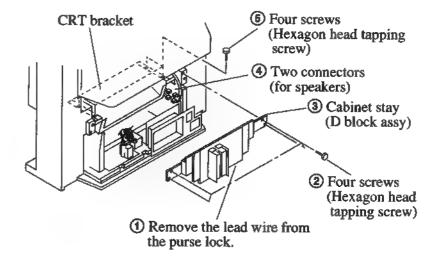
2-2-1. SERVICE STAY ASSY (X-4034-033-2)



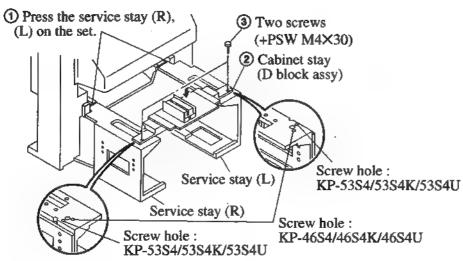
2-2-2.CONTROL PANEL REMOVAL



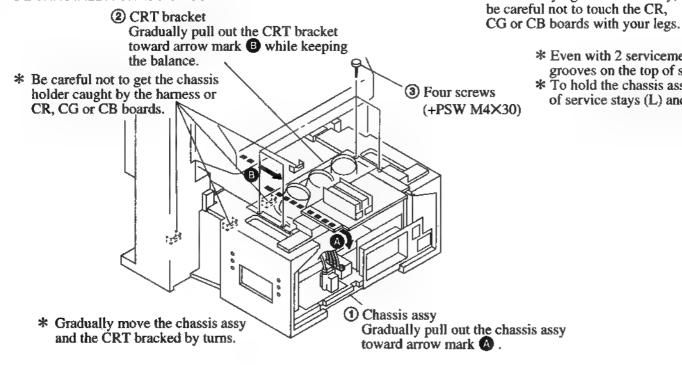
2-2-3. CABINET REMOVAL

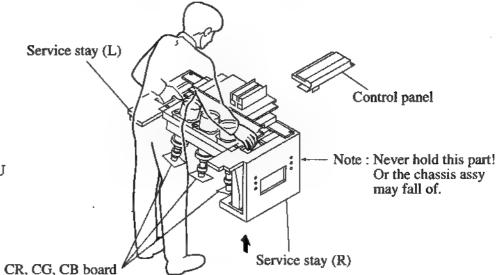


* When carrying the chassis assy,



2-2-5, INSTALL A CHASSIS ASSY





- * Even with 2 servicemen, be sure to put your hands into the grooves on the top of service stays (L) and (R) to carry the chassis assy.
- * To hold the chassis assy, put your hands into the grooves on the top of service stays (L) and (R).

SECTION 3 SET-UP ADJUSTMENTS

SEI-UP ADJUSTMENTS				
ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
SCREEN VOLTAGE ADJUSTMENT (ROUGH ALIGNMENT)				
 Turn the red VR on the FOCUS block all the way to the left and then gradually turn it to the right until the point where you can see the retrace line. Next gradually turn it to the left to the position where the retrace line disappears. FOCUS LENS ADJUSTMENT 	Monoscope Pattern		PICTUREminimum BRIGHTNESS50% SCREEN (G2)	B B B SCREEN B SCREEN B B B B B B B B B B B B B B B B B B
 Loosen the lens screw. Set in service mode. Use VSP on the service mode menu to show only the green colour. Press the Commander Menu button and select FEATURES and CONVERGENCE to display the test signal on the screen. Rotate the green lens and align with the optimal focus point from the test signal. Use RRH from the service mode menu to set to green and red. Disply the test signal and rotate the red lens to obtain the optimum focus at the point where the red and green spots overlap. Use RBH from the service mode menu to set to red and blue. Disply the test signal and rotate the blue lens to obtain the optimum focus at the point where the blue and red spots overlap. Tighten the lens screw. 				CONVERGENCE
1. Select VIDEO mode without signals. 2. Connect an oscilloscope to the TP7103(KR), TP7203(KG) and TP7303(KB) of CR board, CG board and CB board. 3. Adjust R to 172±2Vdc G to 170±2Vdc B to 164±1Vdc by rotating screen VR on the focus block.				172 ± 2Vdc (R) 170 ± 2Vdc (G) 164 ± 1Vdc (B) GND

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
FOCUS VR ADJUSTMENT		-		←
 Set in service mode. Use VSP on the service mode menu to show only the green colour. Press the Commander Menu button (convergence) and output the test signal. Rotate the green VR on the FOCUS block and align to obtain the optimal focus point. Use RRH from the service mode menu to set to green and red. Disply the test signal and rotate the red VR to obtain the optimum focus at the point where the red and green spots overlap. Use RBH from the service mode menu to set to red and blue. Disply the test signal and rotate the blue VR aligning to obtain the optimum focus at the point where the blue and green spots overlap. 				Lens Scanning line visible. Minimize both A and B.
 DEFLECTION YOKE TILT ADJUSTMENT Set in service mode. Set to receive the monoscope signal. Use VSP on the service mode menu to show only the green colour. Loosen the deflection yoke set screw and align the tilt of the deflection yoke so that the bars at the centre of the monoscope pattern are horizontal. After aligning the deflection yoke, fasten it securely to the funnel-shaped portion (neck) of the CRT. The tilt of the deflection yoke for red is aligned with RRH on the service mode menu, and the tilt on the deflection yoke for blue is aligned with RBH on the service menu, is aligned the same as was done for green. 	Monoscope pattern		·	2-pole magnet Deflection yoke Neck Assy Anode cap

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
2-POLE MAGNET ADJUSTMENT				
 Set in service mode. Set to receive the dot pattern signal. Place the caps on the red and blue lens so that only the green colour is showing. Turn the green VR on the focus block to the right and set to overfocus to enlarge the spot. Now align the 2-Pole Magnet so that the enlarged spot is in the center of the Just Focus spot. Align the green focus VR and set for just (precise) focus. Perform the same alignment for red and blue. 	Dot pattern		2-pole magnet	Use the center dot
 4-POLE MAGNET ADJUSTMENT Set in service mode. Set to receive the dot pattern signal. Place the caps on the red and blue lens so that only the green colour is showing. Turn the green VR on the focus block to the left and set to underfocus to enlarge the spot. Now align the 4-Pole Magnet so that the enlarged spot becomes a perfect circle. 	Dot pattern		4-pole magnet	Use the center dot $x: y = 1:2$
DEFOCUS ADJUSTMENT				
 Receive the crosshatch signal. Adjust the FOCUS knob so that the crosshatch pattern vertical line width is as in the figure on the right. Blue only defocus Adjustment. 	Crosshatch pattern		FOCUS VR • RED • GREEN • BLUE	e Focus adjustment point a : b=1 : 4 46": 10-12mm 53": 13-16mm without flare

ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

By using Remote Commander (RM-831), all circuit adjustments can be made.

NOTE: Test Equipment Required.

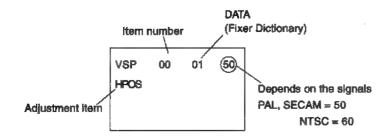
- 1. Pattern Generator
- 2. Frequency counter
- 3. Digital multimeter
- 4. Audio oscillator

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

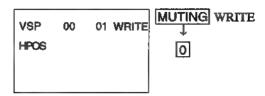
1. Standby mode. (Power off)

SERVICE MODE ADJUSTMENT



- 3. The CRT displays the item being adjusted.
- 4. Press 1 or 4 on the Remote Commander to select the item.
- 5. Press 3 or 6 on the Remote Commander to change the data.
- 6. If you want his recover the latest values press 7 then 0 to read the memory.
- 7. Press MUTING then 0 to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



- 8. Press 8 then 0 on the Remote Commander to initialize.
- 9. Turn set off and on to exit.

2. AFTER IC401 (NON VOLATILE MEMORY) REPLACEMENT

- 1. Enter to Service Mode.
- 2. Press 5 and 0 of the commander to initialize data.
- 3. Adjust standard data to call each item number with 3 and 6 of the commander. Write the data per each item number (MUTING + 0)
- 4. Select CP2 items menu and respectively set the data with 3 and 6 of the commander.

	Item number	Adjustment item	AEP	UK	E (OIRT)
CP2	03	B/G	1	1	1
	-04	I	1	1	1
	05	IRE	0	1 1	0
	-06	D/K	1	0	ì
	07	AUS	0	0	0
	-08	L	1	1	1

Press MUTING + 0 of the commander to write the data.

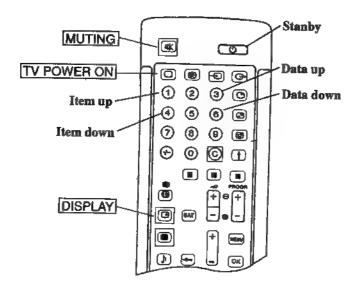
5. Select item CSET of TXT menu and set the data with 3 and 6 of the commander.

TXT	14	CSET	3 : West (AEP/UK), 5 : EAST(K)
			6: GREEK

Press MUTING + 0 of the commander to write the data.

6. Press 3 and 0 of the commander to make the user control data standard.

3. ADJUST BUTTONS AND INDICATOR



RM-831

4. SERVICE MODE LIST

VSP

	Item number	Adjustment item	Data range	Initial data	Note	Device
VSP	00	HPOS	0-63	51	H-SHIFT	CXD2018O
	01	VSIZ	0~63	24	V-SIZE	
	02	VPO8	0~63	24	V-SHIPT	
	03	VSC0	0~15	8	S-CORRECTION	
	04	VLIN	0 ~ 15	10	V-LINEARITY	
	05	HSIZ	0 - 63	191	H-SIZE	
	06	HIPN	0~63	38	PIN-AMP	
	07	HKEY	0-31	9	TILT	
	80	UPCP	0~15	7	UPPER CORNER PIN	1
	09	LOCP	0~15	10	LOWER CORNER PIN	1 .
	100	HBOW	0~15	7	V-BOW	
	11	HSKE	0 - 15	9	V-ANGLE	

DP

DP						
	Item number	Adjustment item	Data range	Initia data	Note	Device
R GH	00	CENT	-127 - +128	20	GREEN, H CENTER	CXP85112B-613S
	01	SKEW	~127~+128	0	GREEN. H SKEW	CAI 831120-0133
	02	BOW	-127~+128	0	GREEN, H BOW	
1	03	4BOW	-127~+128	0	GREEN, H 4th BOW	
	04	SIZE	-127 +128	0	GREEN. H SIZE	
i	05	LIN	-127 - +128	7	GREEN, HILINEARTTY	
	06	MSIZ	-127~+128	5	GREEN, HIMIDDLE SEZE	
ĺ	07	MLIN	-127~+128	-1	GREEN. H MIDDLE LINEARIT	Y
	08	KEY	-127~+128	0	GREEN. H KEY	1
ĺ	09	SSKW	-127~+128	0	GREEN, HISUB SKEW	1
	10	MPIN	-127 +128	. 30	GREEN. H MIDDLE PIN	1 1
•	11	PIN	-127~+128	0	GREEN. H PIN	1 1
	12	SBOW	-127 -+128	0	GREEN, H SUB BOW	1
	13	MBOW	-127 ~ +128	0	GREEN. H MIDDLE BOW	1
	14	4PIN	-127~+128	-3	GREEN. H 4th PIN	
	15	4SBOW	-127 ~ +128	0	GREEN. H 4th SUB BOW	1
R GV	00	CENT	-127 +128	0	GREEN, VICENTER	CXP85112B-613S
	01	SKEW	-127~+128	0	GREEN, V SKEW	0.0000000000000000000000000000000000000
	02	BOW	-127~+128	2	GREEN, V BOW	
	03	SIZE	-127~+128	0	GREEN, V SIZE	i
	04	LIN	-127 ~ +128	4	GREEN, V LINEARITY	1
	05	MSIZ	-127 - +128	0	GREEN, V MIDDLE SIZE	
	06	MKEY	-127 - +128	0	GREEN, V MIDDLE KEY	
	07	KEY	-127~+128	10	GREEN, V KEY	
	06	SSKW	-127~+128	0	GREEN, V SUB SKEW	
	09	MPIN	-127~+128	25	GREEN, V MIDDLE PIN	
	10	PIN	-127 ~ +128	-20	GREEN, V PIN	
- 1	11	SBOW	-127 - +128	-2	GREEN, VISUB BOW	
	12	WAVE	-127~+128	0	GREEN, V WAVE	1
	13	4PIN	-127 ~ +128	10	GREEN, V 4th PIN	
R RH	00	CENT	-127~+128	-30	RED. H CENTER	CXP85112B-613S
ĺ		SKEW	-127 +128	0	RED. H SKEW	
-	02	BOW	-127 - +128	0	RED. H BOW	
	03	4BOW	-127 ~ +128	0	RED. H 4th BOW	
	04	SIZE	-127 ~ +128	0	RED. H SIZE	
	05	LIN .	-127~+128	-10	RED. H LINEARITY	- 1
	06	MSIZ	-127 ~ +128	-5	RED. H MIDDLE SIZE	ĺ
	07	MLIN .	-127 -+128	-5	RED. H MIDDLE LINEARTTY	1
	08	KEY .	-127 +128	-5	RED. H KEY	ŀ
	09	SSKW	-127 - +128	0	RED. H SUB SKEW	
	FO	MPIN -	-127 ~ +128	30	RED. H MIDDLE PIN	
	11	PIN -	-127 ~ +128	ш	RED. H PIN	

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2
I

	Item number	Adjustment item	Data range	Initial data	Note	Device
RRH	12	SBOW	-127~+128	30	RED. H SUB BOW	CXP85112B-613S
	13	MBOW	-127~+128	3	RED. H MIDDLE BOW	
	14	4PIN	-127~+128	-3	RED. H 4th PIN	1
	15	4SBOW	-127 -+128	-2	RED. H 4th SUB BOW	1
R RV	00	CENT	-127~+128	100	RED. V CENTER	CXP85112B-6135
	01	SKEW	-127+128	0	RED. V SKEW	
	02	BOW	-127~+128	2	RED. V BOW	
	03	SIZE	-127~+128	0	RED. V SIZE	İ
	04	LIN	127 +128	D.	RED. V LINEARITY	
	0.5	MSIZ	-127 ~ +128	0	RED. V MIDDLE SIZE	
	06	MKEY	-127~+128	10	RED. V MIDDLE KEY	
	07	KEY	-127~+128	10	RED. V KEY	
	08	SSKW	-127~+128	0	RED. V SUB SKEW	
	09	MPIN	-127~+128	25	RED. V MIDDLE PIN	
	10	PIN	-127 - +128	5	RED. V PIN	
	11	SBOW	-127 - +128	-2	RED. V SUB BOW	
	12	WAVE	-127~+128	15	RED, V WAVE	
	13	4PIN	-127 +128	10	RED. V 4th PEN	i
R BH	00	BSEL	0/1	0	RESISTRATION µ CON BSEL	CXP85112B-613S
	01	CENT	-127~+128	30	BLUE, H CENTER	
	02	SKEW	-127 -+128	0	BLUE, H SKEW	
	03	BOW	-127 -+128	0	BLUE, H BOW	
	04	4BOW	-127 ~ +128	0	BLUE, H 4th BOW	
	05	SIZE	-127~+128	-l	BLUE, H SIZE	
	06	LIN	-127~+128	-10	BLUE, H LINEARITY	
	07	MSIZ	-127 - +128	-5	BLUE, H MIDDLE SIZE	
	08	MLIN	-127 ~ +128	5	BLUE, HIMIDDLE LINEARTY	-
	09	KEY	-127 ~ +128	0	BLUE, H KEY	
	100	SSKW	-127 ~ +128	0	BLUE, HISUB SKEW	
	11	MPIN	-127~+128	30	BLUE, H MIDDLE PIN	
	12	PIN	-127 -+128	0	BLUE, H PIN	
	13	SBOW	-127 - +128	-30	BLUE, H SUB BOW	
	101	MBOW	-127 - +128	-3	BLUE, HIMIDDLE BOW	
	15	4PIN	-127 ~+128	-3	BLUE, H 4th PIN	
	16	4SBOW	-127 ~ +128	2	BLUE, H 4th SUB BOW	
R BV	00	CENT	-127 ~ +128	0	BLUE, V CENTER	CXP85112B-613S
	01	SKEW	-127 - +128	0	BLUE, V SKEW	
	02	BOW	-127 ~ +128	2	BLUE, V BOW	
	03	SIZE	-127 ~ +128	-10	BLUE, V SIZE	
	04	LIN	-127 ~ +128	0	BLUE, VILINEARITY	
	05	MSIZ	-127 ~ +1 2 8	0	BLUE, V MIDDLE SEZE	
	06	MKEY	-127 -+128	-10	BLUE, V MIDDLE KEY	

	Item number	Adjustment item	Data range	Initial data	Note	Device
RBV	07	KEY	-127 ~ +128	0	BLUE, V KEY	CXP85112B-613S
	08	SSKW	-127 ~ +128	0	BLUE, V SUB SKEW	
	09	MPIN	-127 ~ +128	25	BLUE, V MIDDLE PIN	
	10	PIN	-127 +128	0	BLUE VPIN	l· i
	11	SBOW	-127 -+128	100	BLUE, V SUB BOW	li
	12	WAVE	-127 - +128	-15	BLUE, V 3th WAVE	
	13	4PIN	-127 +128	10	BLUE. V 4th PIN	

D/A

	Item number	Adjustment item	Data range	Initial data	Note	Device
D/A	00	BKU	0-63	63	V.BLK UP-SIDE	CXA1315PM
	01	BKD	0-63	0	V.BLK DOWN-SIDE	

MCD

	ltem number	Adjustment item	Data range	Initial data	Note	Device
MCD	00 01	MHUE YDLT	0~31 0~15	7	SUB HUE OF MAIN PICTURE Y DELAY	TDA9141 TDA9143

SCD

	Item number	Adjustment irem	Data range	Initial data	Note	Device
SCD	00	SHUE	0~31	15	SUB HUE OF SUB PICTURE	TDA9160

RGB

	Item number	Adjustment item	Data range	Initial data	Note	Device
RGB	00	SCOL	0-15	4	SUB COLOUR	TDA4780
	01	SBRT	0 ~ 63	27	SUB BRIGHT	
	02	RAMP	0~63	31	RED GAIN	
	03	GAMP	0~63	31	GREEN GAIN	
	04	BAMP	0~63	31	BLUE GAIN	
	05	RCUT	0 ~ 63	31	RED LEVEL REFERENCE	
	06	GCUT	0 - 63	31	GREEN LEVEL REFERENCE	
	07	BCUT	0-63	31	BLUE LEVEL REFERENCE	
	08	PDL	0~63	31	PEAK DRIVE LIMITER	
	09	GNMA	0~63	0	GAMMA	
	103	ADBL	0/1	0	ADAPTIVE BLACK	
	11	RELC	0/1	1	RELATIVE TO CUT-OFF	
	12	TCPL.	0/1	1	TIME CONSTANT PEAK	
					DRIVE LIMITER	

	Item number	Adjustment item	Data range	Initial data	Note	Device
PIP	00	RDV	0~15	8	V READ DELAY	SDA9188-3X
-	01	RDH	0-63	16	H READ DELAY	
	02	FRY	0~15	3	BRIGHTNESS OF THE BORDER FRAME	
	03	9V50	0~7	3	MULTI PIP V 50Hz	
	04	9H50	0-7	2	MULTI PIPH 50Hz	
	05	9V60	0-7	2	MULTI PIP V 60Hz	
	06	9H60	0~7	3	MULTI PIP H 60Hz	
	07	SCON	0~15	8	CONTRAST D/A CONVERTER	

IPQ

	Item number	Adjustment item	Data range	Initial data	Note	Device
₽Q	00	CIN	0/1	0	CINE MODE (ABAB RASTER) OFF/ON	83C652
	01	107	0/1	1	MEMORY CONFIGURATION	
			i i		TMS4C2972 SWITCH	
	02	LFR	0/1	1	LINE FLICKER REDUCTION	
	-				MODE OFFAON	
	03	HWE	0~15	15	HWE I LINE DEALY OFF SET TO	
					DEFAULT	
	04	NŘ	0-3	2	NOISE REDUCTION LEVEL	
	05	Y-V	0 - 255	60	Y-VALUE (BRIGHTNESS)	
	06	UV-V	0 ~ 255	0	UV-VALUE (COLOUR)	
	07	PEAK	0 ~ 127	m	PEAKING	
	08	CTI	0~127	64	CTILEVELDATA	
	09	VWE	0~63	31	VWEI DELAY	

TXT

_	Item number	Adjustment item	Data range	Initial data	Note	Device
TXT	-00	TXH	0~255	9	H START POSITION	TPU3040/TPU3041
	01	TXV	0-63	44	V START POSITION	
	02	VSP	0~255	59	V STOP POSITION	
	03	BSP	0~255	61	BLANKING STOP	
	04	BST	0~255	53	BLANKING START	
	05	QSF	0-31	1	ACQUSITION SOFT SLICER	
	06	A7F	0~255	10	VALUE OF ADRESS 007FH	
	07	QDT	0~63	13	ACQUSITION DATA SLICER	
	08	CST	0-255	0	CLAMPING START	
	09	CSP	0~255	80	CLAMPING STOP	
	10	LMT	0/1	0	LIMIT SLICER ADAPTION SW	
	11	GMX	0~255	31	GAIN MAX	
	12	FMX	0~255	31	FILTER MAX	
	13	TVER	0~3	3	TPU VERSION (TC2023)	
	14	CSET	0-7	3	TELETEXT LANGUAGE SETTING 3: WEST (AEP/UK) 5: EAST (K), 6: GREEK	

AP

	Item number	Adjustment item	Data range	Initial data	Note	Device
AP	00	FAW	0~255	01-	NICAM FAW THRESHOLD	MSP3410
	01	CIM	0~255	4	NECAM ERROR BIT THRESHOLD(MONO>NICAM)	
	02	CIN	0-255	80	NICAM ERROR BIT THRESHOLD(NICAM>MONO)	
	03	WGO	0~255	10	WEST GERMAN STEREO LOW THRESHOLD	
	04	WGS	0~255	21	WEST GERMAN STEREO HIGH THRESHOLD	
	05	WGT	0~255	80	WEST GERMAN STEREO LOW 2 THRESHOLD	
	06	WGB	0 ~ 255	250	WEST GERMAN STEREO HIGH 2 THRESHOLD	
	07	AOG	0/1	1	AGC AUTO / CONSTANT SWITCH	
	08	CDB	0-63	30	AGC GAIN VALUE AT CONSTANT MODE	
	09	FMP	0~127	26	FM MONO PRESCALE	
	10	WGP	0~127	26	WEST GERMAN STEREO PRESCALE	
	l II	INIP	0~127	127	I NICAM PRESCALE	
	12	BNIP	0~127	72	B/G NICAM PRESCALE	
	13	LNIP	0 – 127	10	L NICAM PRESCALE	
	14	DNIP	0 ~ 127	72	D/K NICAM PRESCALE	
	15	CRM	0/1	0	CARRIER MUTE FUNCTION	
	16	ACO	0/1	1	AUDIO CLOCK OUT OFF/ON	
	17	WAC	0~15	1	WEST GERMAN STEREO JUDGE CONSTANT	

CPU

	Item number	Adjustment item	Data range	Initial data	Note	Device
CPU	-00	OSH	0~63	3 18 OSD H POSITION		CXP85460
	01	ODL	0 ~ 256	15	POWER ON DELAY	
	02	FTZP	0/1	1	FTZ MUTE PRIORITY	
	03	RGBP	0/1	0	RGB MODE PRIORITY	
	04	NICP	0/1	1	NICAM PRIORITY	
	05	BAG	0/1	1	TV SYSTEM B/G OFF/ON	
	06	I	0/1	1	TV SYSTEM I OFFION	
	07	IRE	0/1	0	TV SYSTEM IRE OFF/ON	
	08	D/K	0/1	1	TV SYSTEM D/K OFF/ON	
	09	AUS	0/1	0	TV SYSTEM AUS OFF/ON	
	10	L	0/1	1	TV SYSTEM LOFF/ON	
	11	MYC2	0/1	0	YC2/AV2 PRIORITY	
	12	MYC4	0/1	0	YC4/AV4 PRIORITY	

IP 2

				5		
	Item number	Adjustment item	Data range	Initial data	Note	Device
1P2	00	BOX	0/1	0	BOX FUNCTION SWITCH	TDA9160
	Q1	SCF	0~3	. 0	SCREEN FADE FUNCTION	
	00	SPS	0~3	0	SPLIT SCREEN FUNCTION	
	03	PHAS	0/1	0	PHASE FLAG	
	04	AXIS	0/1	1	RGB AXIS	
	05	HSFT	0~31	10	H. SHIFT ADJUSTMENT	
	06	SFTE	0/1	1	PICTURE SHIFT ENABLE	
	07	SFIF	0/1	0	PICTURE SHIFT FACTORY CHECK	
	08	3BCN	0~255	10	BINARY BIT CHECK FOR TELETEXT	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
CONVERGENCE ADJUSTMENT				
•When replacing the deflection yoke, always perform "DEFLECTION YOKE TILT ADJUSTMENT" before adjusting the convergence.				
Adjustment procedure VSP MAIN R GH (SUB), R GV (SUB) R RH (SUB), R RV (SUB) R BH (SUB), R BV (SUB)				
GREEN REGISTRATION ADJUSTMENT V-SHIFT adjustment	Monoscope pattern or Crosshatch		<vsp menu=""> VSP VPOS</vsp>	VPOS +
V-LINEARITY adjustment	pattern		VSP VLIN	VLIN • • •
V-SIZE, V-CORRECTION adjustment While tracking, adjust so that the lattice intervals for VSIZ and VSCO are equal.			VSP VSIZ VSP VSCO	vsiz vsco + + + +

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
• H-SHIFT adjustment			VSP HPOS	HPOS •
H-SIZE adjustment Finely adjust with SUB MSIZ.			VSP HSIZ	HSIZ +
• PIN-AMP adjustment Finely adjust with SUB MPIN.			VSP HPIN	HPIN - ((()))
UPPER/LOWER-CORNER PIN adjustment Correct the screens top and bottom bow line. However, if this adjustment is overdone, distortion may occur with the PIN-AMP adjustment that can not be re-adjusted.			VSP UPCP VSP LOCP	UPCP +
Note: The PIN-AMP adjusts the overall screen from top to bottom, but the UPPER/LOWER-CORNER PIN adjustments have large movement in the top and bottom sections, so be careful.				LOCP -
V-ANGLE, V-BOW adjustment Correct the tilt and bow of the vertical line at the center of the screen.			VSP HSKE VSP HBOW	HSKE -
				HBOW ←
TILT adjustment Adjust to eliminate the tilt of one of the two vertical lines at both ends of the screen.			VSP HKEY	HKEY -

ADJUSTMENT ITEM AND PROCEDURE						₹E		EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
CONVERGENCE SUB ADJUSTMENT					·						
Adjustme	ent O:Yes	-: N	lo						i		
Disalas	A diverse ent item		A		nent typ						
Display	Adjustment item	RGH	RGV	RRH	RRV		RBV				
BSEL	COL SELECT	_		-		0	-				
CENT	CENT	0	0	0	0	0	0				
SKEW	SKEW	0	0	0	0	0	0				
BOW	BOW	0	0	0	0	0	0				
4BOW	4TH BOW	0	-	0	_	0	_				
SIZE	SIZE	0	0	0	0	0	0				
LIN	LIN	0	0_	0	0	0	0				
MSIZ	MID SIZE	0	0	0	0	0	0				
MLIN	MID LIN	0	0	0	_	0	_				
MKEY	MID KEY	-	0	_	0_	_	0				
KEY	KEY	0	0	0	0	0	0				
SSKW	SUB SKEW	0	0	0	0	0	0				
M PIN	MID PIN	0	0	0	0	0	0				
PIN	PIN	0	0	0	0	0	0				
SBOW	SUB BOW	0	0	0	0	0	0				
WAVE	WAVE	-	0	-	0	_	0				
MBOW	MID BOW	0	-	0		0	_				
4PIN	4TH PIN	0	0	0	0	0	0				
4SBOW	4TH SUB BOW	0	-	0	-	0	-				
			-								

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN SUB ADJUSTMENT SCREEN CENTER SECTION GREEN VERTICAL LINE ADJUSTMENT 1. Finely adjust with RGH CENT, RGH BOW, RGH SKEW. Adjust by watching out for the RGH CENT screen center section.			<rgh menu=""> RGH CENT RGH BOW RGH SKEW</rgh>	Watch out only for the GH CENT center point. Watch the vertical center line.
2. RGH 4TH BOW adjustment Correct the corner distortion that could not be adjusted away with the RGH 4BOW adjustment.			RGH 4BOW	RGH CENT RGH BOW RGH SKEW RGH 4BOW RGH 4BOW

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
SCREEN CENTER SECTION GREEN HORIZONTAL LINE			<rgv menu=""></rgv>	
ADJUSTMENT				
Finely adjust the center position of the vertical line at the center of the screen with RGV CENT.			RGV CENT	Watch the horizontal center line. Watch out only for the RGV CENT center point.
				RGV CENT
Correct the tilt and bow of the horizontal line at the center of the screen with RGV SKEW and RGV BOW.			RGV SKEW RGV BOW	RGV SKEW RGV BOW
				* The state of the
GREEN SIZE AND LINEARITY ADJUSTMENT			<rgh menu=""></rgh>	1
 Balance the sizes at both sides of the center section of the screen with RGH MLIN. Balance the sizes on both end sections of the screen with RGH LIN. While tracking, adjust with RGH MLIN and RGH LIN so that the sizes of the horizontal line at the center of the screen are 			RGH MLIN RGH LIN	MALIN LIN

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
 GREEN HORIZONTAL SIZE ADJUSTMENT Adjust with RGH MSIZE so that the sizes of both ends and of both sides of the center section of the screen are equal. Adjust with RGH SIZE so that the horizontal sizes of both ends and of both sides of the center section of the screen are equal. While tracking, adjust with RGH MSIZ and RGH SIZE so that the lattice intervals for the horizontal line section of the center section of the screen are equal and so that the horizontal size is 			<rgh menu=""> RGH MSIZ RGH SIZE</rgh>	MSIZ
the prescribed value. 4. If M LIN is changed when the RGH MSIZ and RGH SIZE adjustment is complete, adjust again while tracking.				GH MUN GH MSIZ GH SIZE
With just the H SIZE adjustment in MAIN, if there is no need to adjust RGH SIZE in SUB this can save power. GREEN VERTICAL LINEARITY ADJUSTMENT 1. Adjust RGV LIN so that the vertical lines at the top and bottom of the screen are symmetrical.			<rgv menu=""> RGV LIN</rgv>	_

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
 Adjust with RGV MSIZE so that the sizes for the top and bottom sections of the screen and for both sides of the center section of the screen are equal. Set the vertical size to the prescribed value with RGV SIZE. Adjust RGV MSIZ and RGV SIZE watching the vertical line at the center section of the screen. While tracking, adjust with RGV MSIZ and RGV SIZE so that the lattice intervals for the vertical line section of the center section of the screen are equal and so that the vertical size is the regulation value. If RGV LIN is out of place when the RGV MSIZ and RGV SIZE adjustment is complete, adjust again while tracking. If there is no need to adjust RGV SIZE in SUB with just the V SIZE adjustment in MAIN, this can save power. 			<rgv menu=""> RGV MSIZ RGV SIZE</rgv>	MSIZ SIZE GV MSIZ
 GREEN HORIZONTAL TRAPEZOIDAL DISTORTION ADJUSTMENT Adjust with RGH SSKW so that the tilt of the vertical lines m both ends of the screen is symmetrical left and right. Adjust with RGH KEY so that there is no tilt in the vertical lines m both ends of the screen. If there is a tilt on either the left or right after the RGH KEY adjustment, adjust while tracking. 			<rgv menu=""> RGH SSKW RGH KEY</rgv>	SS KW KEY

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
 GREEN HORIZONTAL QUATERNARY ADJUSTMENT Correct the quaternary distortion with RGH 4PIN. While balancing, correct the quaternary distortion of both end sections of the screen with RGH 4SBOW. While tracking, adjust with RGH 4PIN and RGH 4SBOW. 			<rgh menu=""> RGH 4PIN RGH 4SBOW</rgh>	4 PIN ASBOW
GREEN HORIZONTAL ASYMMETRICAL PIN DISTORTION ADJUSTMENT 1. Adjust with RGH MBOW so that the pin asymmetry at both sides of the center section of screen is symmetrical. 2. Adjust with RGH SBOW so that the bow at both end sections of the screen is symmetrical left and right. 3. While tracking, adjust with RGH MBOW and RGH SBOW so that the bow of vertical lines on the entire screen is symmetrical left and right.			<rgh menu=""> RGH MBOW RGH SBOW</rgh>	M BOW

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN HORIZONTAL SYMMETRICAL PIN DISTORTION			<rgh menu=""></rgh>	
ADJUSTMENT				
 Adjust the pin distortion at both sides of the center section of the screen with RGH MPIN. Adjust the pin distortion at both end sections of the screen with RGH PIN. While tracking, adjust with RGH MPIN and RGH PIN so that the PIN of vertical lines on the entire screen have no bowing. If there is asymmetrical pin distortion after the RGH MPIN 			RGH MPIN RGH PIN	M PIN
and RGH PIN adjustments, adjust with RGH MBOW and RGH SBOW while tracking.			RGH MBOW RGH SBOW	THE PROPERTY OF THE PROPERTY O
With just the PIN AMP adjustment in MAIN, if there is no need to adjust RGV PIN in SUB, this can save power.				GH MPIN
GREEN VERTICAL WAVE (TERTIARY DISTORTION)			<rgv menu=""></rgv>	
ADJUSTMENT				
Take the screen top and bottom horizontal lines with RGV WAVE and find the secondary and quaternary waveform.			RGV WAVE	RGV WAVE
There is KEY distortion after the RGV WAVE adjustment, so adjust with RGV WAVE and RGV KEY while tracking.			RGV KEY	RGV KEY

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN VERTICAL QUATERNARY DISTORTION			<rgv menu=""></rgv>	
ADJUSTMENT				
Correct the quaternary distortion of the horizontal lines at the top and bottom sections of the screen with RGV 4PIN.			RGV 4PIN	RGV 4PIN
 Since there is no 4SBOW for vertical correction, there will be a slight imbalance, but adjust to eliminate the distortion from the horizontal line at either the top or the bottom of the screen. In many cases, the horizontal lines at the top and bottom sections of the screen are not straight lines after the adjustment. As long as the secondary distortion is mild enough that it can be corrected with the PIN adjustment, this is OK. 				And And And And Andrews and An
GREEN VERTICAL TRAPEZOIDAL DISTORTION			<rgv menu=""></rgv>	
ADJUSTMENT			RGV SSKW	DCV CCVVI
Adjust with RGV SSKW so that the tilt of the horizontal lines at the top and bottom sections of the screen is symmetrical about the center position horizontal line.			RGV MKEY	RGV SSKW
 Adjust with RGV MKEY so that there is no tilt for the line sections at both sides of the horizontal lines at the center section of the stream. Adjust with RGV KEY so that there is no tilt for the horizontal 			RGV KEY	
lines at the top and bottom sections of the screen.While tracking, adjust with RGV MKEY and RGV KEY so that there is no tilt for the horizontal lines on the entire screen.				MKEY
5. If the tilt is unbalanced after the RGV MKEY and RGV KEY adjustment, adjust again with RGV SSKW.			RGV SSKW	GV SSKW GV KEY GV MKEY

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN VERTICAL ASYMMETRICAL PIN DISTORTION		·	<rgv menu=""></rgv>	
(SECONDARY DISTORTION) ADJUSTMENT				
Correct the asymmetrical pin distortion at the top and bottom sections of the screen with RGV SBOW.			RGV SBOW	RGV SBOW
GREEN VERTICAL ASYMMETRICAL PIN DISTORTION ADJUSTMENT			<rgv menu=""></rgv>	
Adjust the pin distortion for both side sections and the center				
of the screen with RGV MPIN. 2. Adjust with RGV PIN so that the horizontal lines at the top and bottom sections of the screen are straight lines.			RGV MPIN RGV PIN	
Adjust with RGV MPIN and RGV PIN so that there is no curve in the horizontal lines on the entire screen.				
				MPIN
				PIN
				The state of the s
After the adjustments in Items 1-3, adjust the tracking with RGV SBOW, RGV MPIN, and RGV PIN.			RGV SBOW	GV SBOW]
				GV MPIN GV PIN
			_	

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
GREEN AND RED REGISTRATION ADJUSTMENT				
 (RRH, RRV) Receive a PAL cross-hatch signal. Adjust so that the red lines lay on the green lines. Adjust with the same procedure as the GREEN SUB adjustment. Notes: 1. The main correction is not carried out during red registration adjustment. Beware. The green adjustment items can be changed by mistake. Unlike for green, adjust within the range -127 ~ +128. 	PAL Cross-hatch pattern			
GREEN AND BLUE REGISTRATION ADJUSTMENT (RBH, RBV) 1. Receive a PAL cross-hatch signal. 2. Adjust so that the blue and green lines are on top of each other. Notes: 1. The main correction is not carried out during RED registration adjustment.	PAL Cross-hatch pattern			
Beware. The GREEN and RED adjustment items can be changed by mistake. Output Description: Output Des				

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ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
1. Receive an off-air signal. 2. Adjust the AGC VR (IF 1001) so that there is no snow noise and cross-modulation. WHITE BALANCE ADJUSTMENT 1. Receive the monoscope pattern signal and adjust the picture quality with the menu. 2. Adjust service mode SBRT so that the signal 10 IRE section barely glows. 3. Receive the all-white pattern signal. 4. Adjust the white balance with service mode GCUT and BCUT. 5. Adjust service mode SBRT so that the signal 100 IRE section barely glows. 6. Adjust the white balance with service mode GAMP and BAMP. 7. Repeatedly adjust the white balance for the minimum and maximum picture settings.	Monoscope pattern All White pattern		PICTUREminimum < RGB MENU > RGB SBRT RGB GCUT RGB BCUT PICTUREminimum RGB GAMP RGB BAMP PICTUREmaximum	

SECTION 4 SAFETY RELATED ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT	MEASUREMENT	ADJUSTMENT	ILLUSTRATION AND SHAPE
	AND SIGNAL	POSITION	LOCATION	AND NUMBER
E BOARD] IV HOLD DOWN CIRCUIT OPERATION CHECK AND ADJUSTMENT When replacing the following components marked with □ on the chematic diagram, always check hold-down voltage and if ecessary re-adjust. PERATION CHECK 1. Connect a HV static voltmeter to the unconnected plug of the high-voltage block. 2. Connect a 68kΩ variable resistor, set to maximum value, across CN4006. 3. Power on the set. 4. Receive dot signal pattern. 5. Gradually lower the value of the variable resistor and check that the hold-down circuit operates w a static voltmeter reading of 33.40±0.30kVdc when the raster disappears. IV HOLD-DOWN ADJUSTMENT 1. REPART STEPS ① ~ ⑤ as above. 2. Just at the point hold-down circuit begins to operate switch off the set. 3. Remove the VR connected across CN4006, and measure it's resistance. 4. Solder a resistor value, nearest to the measured value, across CN4007. 5. Reconfirm operation check.	HIGH-VOLTAGE Voltmeter Dot pattern			

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT	MEASUREMENT	ADJUSTMENT	ILLUSTRATION AND SHAPE
	AND SIGNAL	POSITION	LOCATION	AND NUMBER
HV REGULATION CIRCUIT CHECK AND ADJUSTMENT When replacing the following components marked with on the schematic diagram always check HV regulation, and if necessary readjust. OPERATION CHECK 1. Connect a HV static voltmeter to the unconnected plug of the high-voltage block. 2. Power on the set. 3. Receive dot signal pattern. 4. Check that the HV static voltmeter is reading 31.00±0.2kVdc. HV Regulation adjustment 1. Repeat step as aboue. 2. Connect 68kΩ variable resistor, set to maximum value, to CN4006. 3. Power on the set. 4. Receive dot signal pattern. 5. Gradually lower the value of the variable resistor until the static voltmeter is reading 31.00±0.20kVdc. 6. Switch off the set. 7. Remove the VR connected across CN4006, and measure its value. 8. Solder a resistor value, nearest to the measured value, across CN4006. 9. Reconfirm operation check.	Dot pattern HIGH-VOLTAGE Voltmeter	Marked parts C4033, C4034, C4046, C4047, C4049, D4012, D4018, D4023, D4028, D4035, R983, R4022, R4046, R4047, R4048, R4053, R4054, R4057, R4059, R4060, R4061, R4077, R4079, R4086, R4087, R4088, R4091, R4092, R4097, R4098, R4100, Q4013, T4002, T4003 (FBT), ■ Board, HV Block HIGH-VOLTAGE Voltmeter 31.00 ± 0.20k Vdc CN4006	R983	CN4006 CN4006 CN4006 CN4006 CN4006 CN4006 CN4006

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND NUI	
HV HOLD DOWN ADJUSTMENT WITHOUT USING STATIC HIGH VOLTAGE METER				E BOARD	-COMPONENT SIDE-
It is normally desirable that HV hold down and HV regulation checks uses a high voltage meter. However, sometimes one is not available, for example in the held, below is an adjustment method that can be used.			■ R983, R988	6	01
 Receive DOT signal (PICTURE: 80%, BRIGHTNESS: 50%). Turn off the power of the projector, and remove ■R983 from CN4006 and ■R988 from CN4007. Fix a 47kΩ VR onto CN4006 with solder, and set the resistor value at maximum. 	Dot pattern		47kΩ VR maximum	CN4008 © 0 CN4007	
 Fix a 68kΩ VR onto CN4007 with solder, and set the resistor value at minimum. 4. Turn on the power of the projector. Connect a digital voltmeter to IC4001 ⑤ pin. 5. Slowly turn the 47kΩ VR that is soldered to CN4006, and 	Digital voltmeter	IC4001 (8) pin	68kΩ VR minimum		
gradually lower the voltage of IC4001 (5) pin down to 1.67Vdc. 6. Slowly turn the 68kΩ VR that is soldered to CN4007, and gradually raise the resistor value until the raster disappears and the HV hold down circuit starts operating.			;	CN4007	CN4008
 7. Turn off the power of the projector. 8. Remove the 68kΩ VR from CN4007, and measure the resistor value with the digital voltmeter. Put a resistor (metal oxide, 1/4W) that has same value as the measured resistor onto CN4007 and solder it. 				68ΚΩ	47ΚΩ
 Set the value of the 47kΩ VR on CN4006 at the maximum. Receive DOT signal (PICTURE: 80%, BRIGHTNESS: 50%). 			PICTURE		
 10. Turn on the power of the projector. 11. Connect a digital voltmeter to IC 4001 (a) pin. 12. Slowly turn down the 47kΩ VR that is connected to CN4006 to gradually lower the voltage of IC4001 (b) pin between 1.62 to 1.70Vdc, and check if the raster disappears and the hold down 			BRIGHTNESS		
 1.70 vgc, and check if the raster disappears and the hold down circuit operates. 13. Turn off the power of the projector. 14. Remove the 47kΩ VR from CN4006. Put back the removed R983 onto CN4006 and solder it again. 					

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
HV REGULATOR ADJUSTMENT WITHOUT USING STATIC HIGH VOLTAGEMETER (■R983)			№ R983	E BOARD -COMPONENT SIDE-
 Receive DOT signal (PICTURE: 80%, BRIGHTNESS: 50%). Turn off the power of the projector. Remove MR983 from CN4006. Fix a 47kΩ VR onto CN4006 with solder, and set the resistor 	Dot signal		BRIGHTNESScenter	CN4006
 value at maximum. 5. Turn on the power of the projector. Connect a digital voltmeter to IC4001 ⑤ pin. 6. Slowly turn the 47kΩ VR that is soldered to CN4006, and 	Digital voltmeter	IC4001 ⑤ pin		0 0 CN4007
 gradually lower the voltage of IC4001 (§) pin down to 1.49Vdc. 7. Turn off the power of the projector. 8. Remove the 47kΩ VR from CN4006, and measure the resistor value with the digital voltmeter. Put a resistor (metal oxide, 1/4W) that has same value as the measured resistor onto CN4006 and solder it. 				CN4006
 7. Turn on the power of the projector. Check if the voltage of IC4001 (a) pin is between 1.46 and 1.53Vdc. 8. Receive FULL WHITE signal (PICTURE: 80%, BRIGHTNESS: 50%). 7. Turn off the power of the projector. 	Full white pattern		PICTURE80% BRIGHTNESScenter	47ΚΩ
[G BOARD]			:	G BOARD - COMPONENT SIDE -
+B MAX VOLTAGE CONFIRMATION The following adjustments should always be performed when replacing IC6002 and R6054. 1. Supply 230VAC in with variable autotransformer. 2. Input monoscope signal. 3. Set the PICTURE control and the BRIGHTNESS controls to reset.		CN6014 ① pin		R6054 ① ⑥ CN6014 IC6002
 4. Confirm the voltage of G BOARD CN6014 ① pin connecter is less than 134.50 ± 1.00Vdc. 5. If step 4 is not satisfied, replace IC6002 and R6054 repeat above steps. 		CNOOT4 (J pin		Less than 134.50 ±1.00Vdc

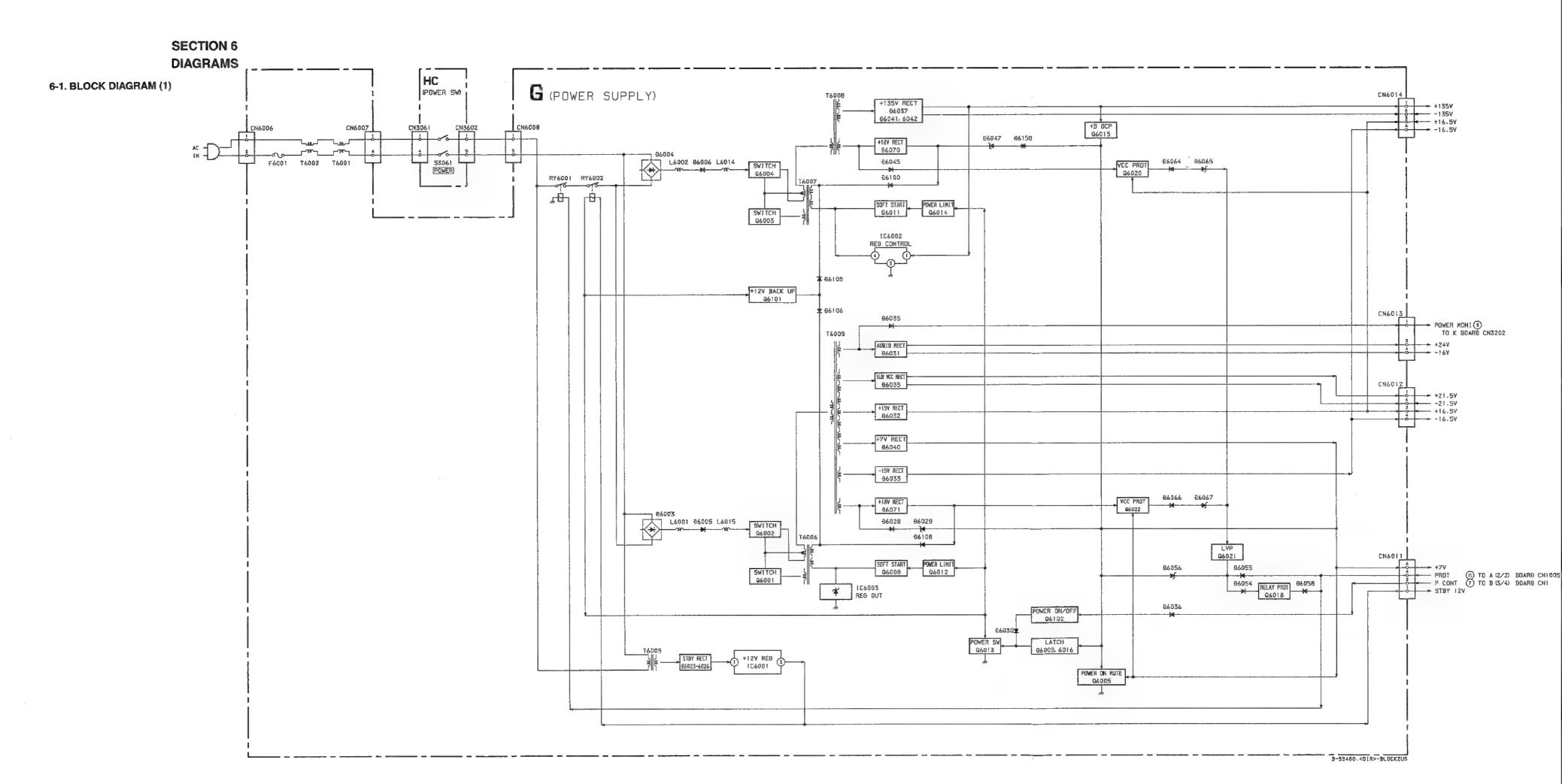
SECTION 5 ELECTRICAL ADJUSTMENTS

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
B BOARD ADJUSTMENT 1. Input the PAL Colour Bar signal and adjustment the picture control. 2. Set to service mode. 3. Connect an oscilloscope between pin of IC409 and ground. 4. Adjust SCOL so that Vcy = VMg = VBi in the waveform levels. 5. Write the data to memory.	PAL Colour Bar pattern Oscilloscope	IC409 ② pin (B(3/4) Board)	PICTURE 80% RGB SCOL : Vcy =VMg=VBi	<ic409 (2)="" pin=""> Cy Mg Bi Bk Vw Vcy VMg VBi 63.5 μsec <ic409 (2)="" pin=""> Cy Mg Bi F H Bk</ic409></ic409>
SUB HUE (MHUE, SHUE) ADJUSTMENT 1. Input the NTSC Colour Bar signal. 2. Set to service mode. 3. Connect an oscilloscope between ❷ pin of IC409 and ground. 4. Adjust MHUE so that Vcy = VMg in the waveform levels. 5. Write the data to memory.	NTSC Colour Bar pattern Oscilloscope	IC409 ② pin (B(3/4) Board)	MCD MHUE : Vcy =VMg	(PIP MODE) < IC409 ⊗ pin > W Cy Mg Bi W Cy Mg Bi Yw G R Bk Yw G R Bk
(PIP MODE) 1. Input the NTSC Colour Bar signal. 2. Select PIP on screen mode and put the set into service mode. 3. Connect an oscilloscope between pin of IC409 and ground. 4. Adjust SHUE so that Vcy = VMg in the waveform levels. 5. Write the data to memory.	NTSC Colour Bar pattern Oscilloscope	IC409 ② pin (B(3/4) Board)	SCD SHUE: Vcy =VMg	WW Vcy VMg VBI VW Vcy VMg VBI MAIN PIP SCREEN SCREEN
 SUB CONTRAST (SCON) ADJUSTMENT (PIP MODE) Input the PAL Colour Bar signal. Select PIP on screen mode and put the set into service mode. Connect an oscilloscope Q1 emitter on the B(1/4) board and ground. Adjust SCON so that V MAIN-Y = V PIP-Y in the waveform levels. Write the data to memory. 	PAL Colour Bar pattern Oscilloscope	Q1 emitter (B(1/4) Board)	PIP SCON: V main-y =V pip-y	PIP MODE) < B(1/4) board - Q1 emitter > White γ V MAIN-Y Black PIP SCREEN PIP SCREEN

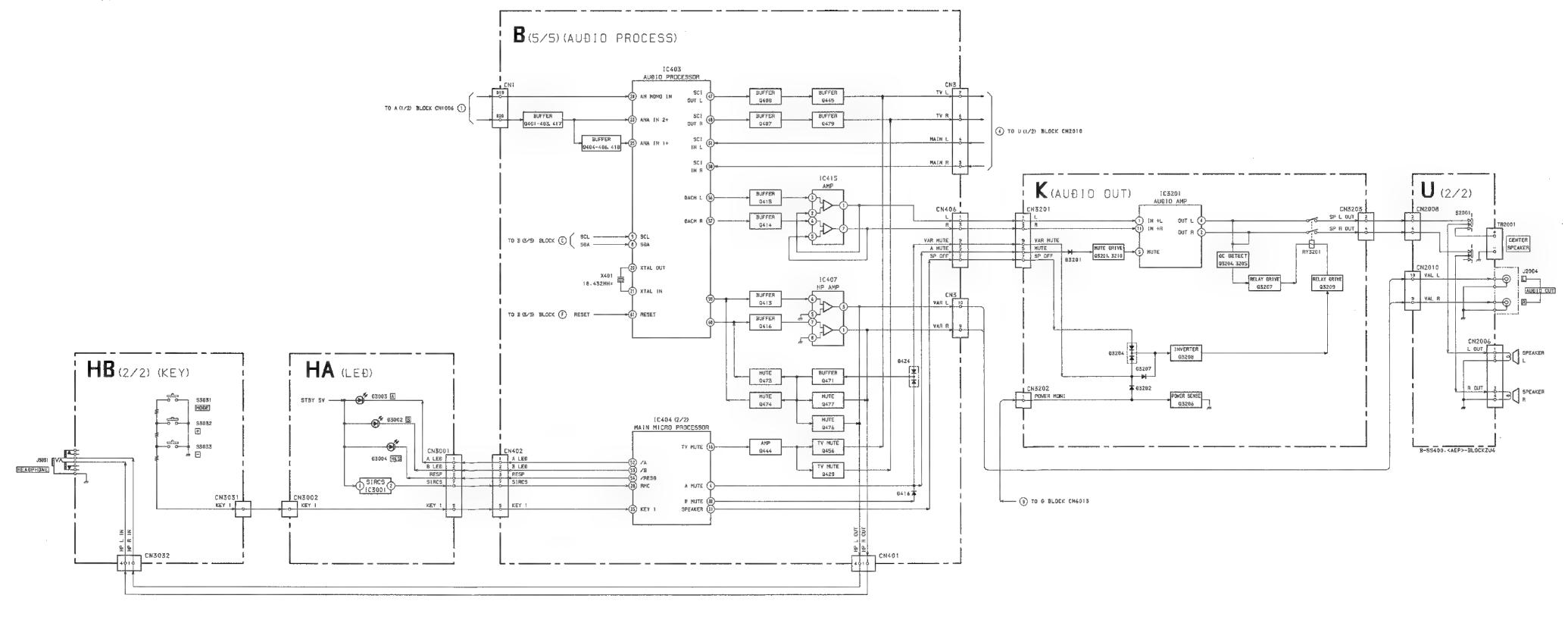
EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
			< Q2 emitter, Q7 emitter >
Oscilloscope	[B(1/4) Board] Q2 emitter (R-Y) Q7 emitter (B-Y)	[B(1/4) Board] RV1 (R-Y) RV2 (B-Y)	- V 80(P-Y) =1:==================================
Monoscope pattern		< PIP MENU > RDV RDH	
,		<txt menu=""></txt>	
		TXH (H position) TXV (V position)	
PAL Colour Bar pattern		< CPU MENU > OSH	
	Oscilloscope Monoscope pattern	Oscilloscope [B(1/4) Board] Q2 emitter (R-Y) Q7 emitter (B-Y) Monoscope pattern PAL Colour Bar	Oscilloscope [B(1/4) Board] Q2 emitter (R-Y) Q7 emitter (B-Y) RV1 (R-Y) RV2 (B-Y) Monoscope pattern <pip menu=""> RDV RDH <txt menu=""> TXH (H position) TXV (V position) PAL Colour Bar pattern CPU MENU > </txt></pip>

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
B2 BOARD ADJUSTMENT 1. Receive the SECAM Colour Bar signal. 2. Adjust BELL filter by rotating L3503 so that pin IC3502 should be flat/smooth chroma signal. 3. Adjust B-Y filter by rotating L3505 so that Q3508 emitter (R-Y out) should getsymmetrical transient between (R-Y)>(B-Y) and (B-Y)>(R-Y).	SECAM Colour Bar pattern	IC3502 (1) pin Q3508 emitter	L3503 L3505	GOOD BAD Q3508 emitter waveform >
H. FREQUENCY ADJUSTMENT 1. Connect w frequency counter to pin of IC3501. 2. Adjust RV3501 so that the frequency counter is 15.625KHz ± 50Hz. 3. Input a SECAM Colour Bar signal/p. 4. Confirm that pin of IC3501 should be 15.625KHz ± 50Hz.	SECAM Colour Bar pattern	RV3501	IC3501 12 pin	GOOD BAD

ADJUSTMENT ITEM AND PROCEDURE	EQUIPMENT AND SIGNAL	MEASUREMENT POSITION	ADJUSTMENT LOCATION	ILLUSTRATION AND SHAPE AND NUMBER
A BOARD ADJUSTMENT				
 V BLANKING SIZE ADJUSTMENT Receive PAL monoscope signal. Select "BKU" in D/A menu. Reduce the data value by pressing 3 and 6 on the commander to adjust blanking size and minimize the shear on the screen top. Select "BKD" in D/A menu. Increase the data value by pressing 3 and 6 on the commander to adjust blanking size and minimize the shear on the screen bottom. 	PAL Monoscoope pattern			
 H SIZE ADJUSTMENT Receive a PAL monoscope signal. Set to Service Mode. Select H SIZE of VSP menu with the commander buttons 1 and 4. Adjust to 15.4 ± 0.2 square with 3 and 6. 	PAL Monoscoope pattern			
S CORRECTION ADJUSTMENT 1. Receive a PAL monoscope signal. 2. Set to Service Mode. 3. Select VSCO of VSP menu with the commander buttons 1 and 4. 4. Adjust to data "00" with 3 and 6.	PAL Monoscoope pattern			
 V SIZE ADJUSTMENT Receive a PAL monoscope signal. Set to Service Mode. Select V SIZE of VSP menu with the commander buttons and 4. Adjust to 11.6 ± 0.2 square with 3 and 6. 	PAL Monoscoope pattern			

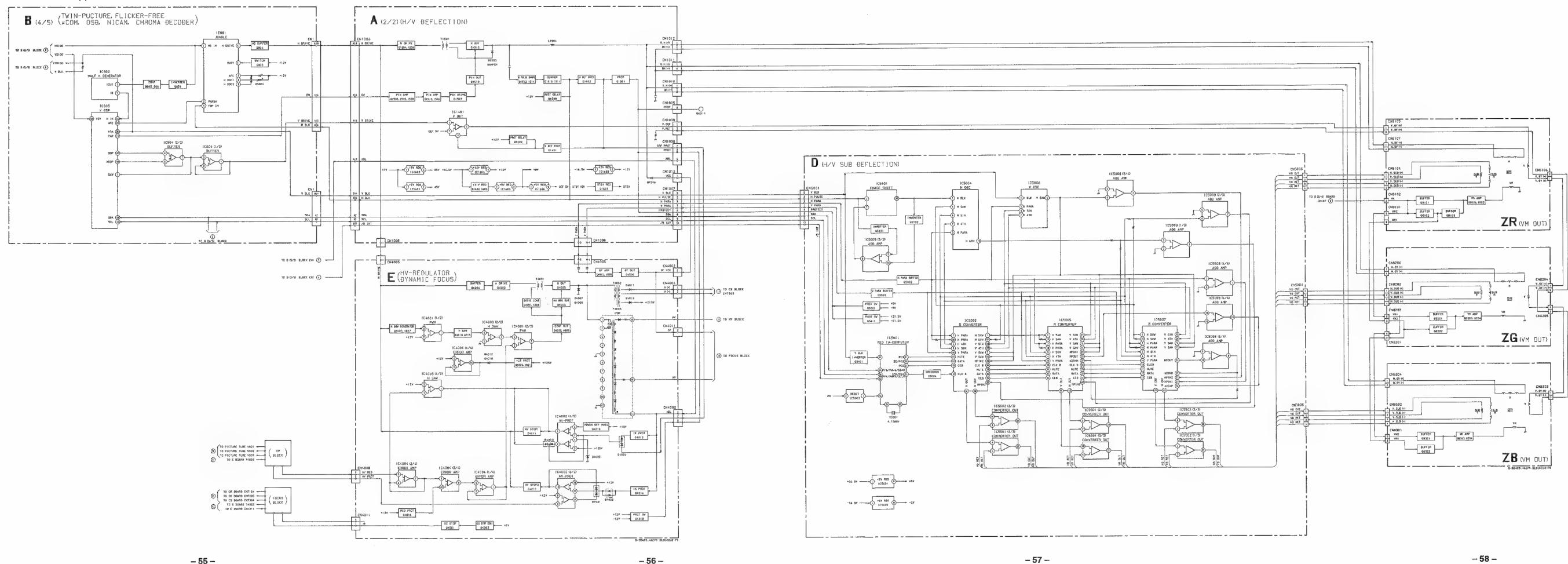


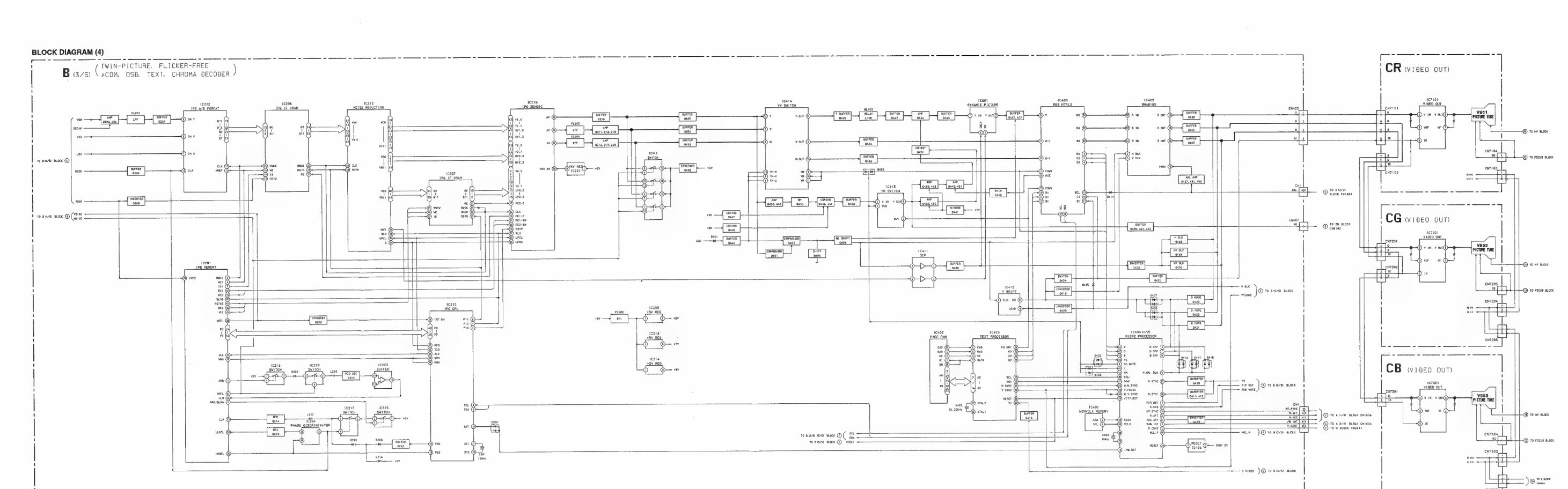
BLOCK DIAGRAM (2)



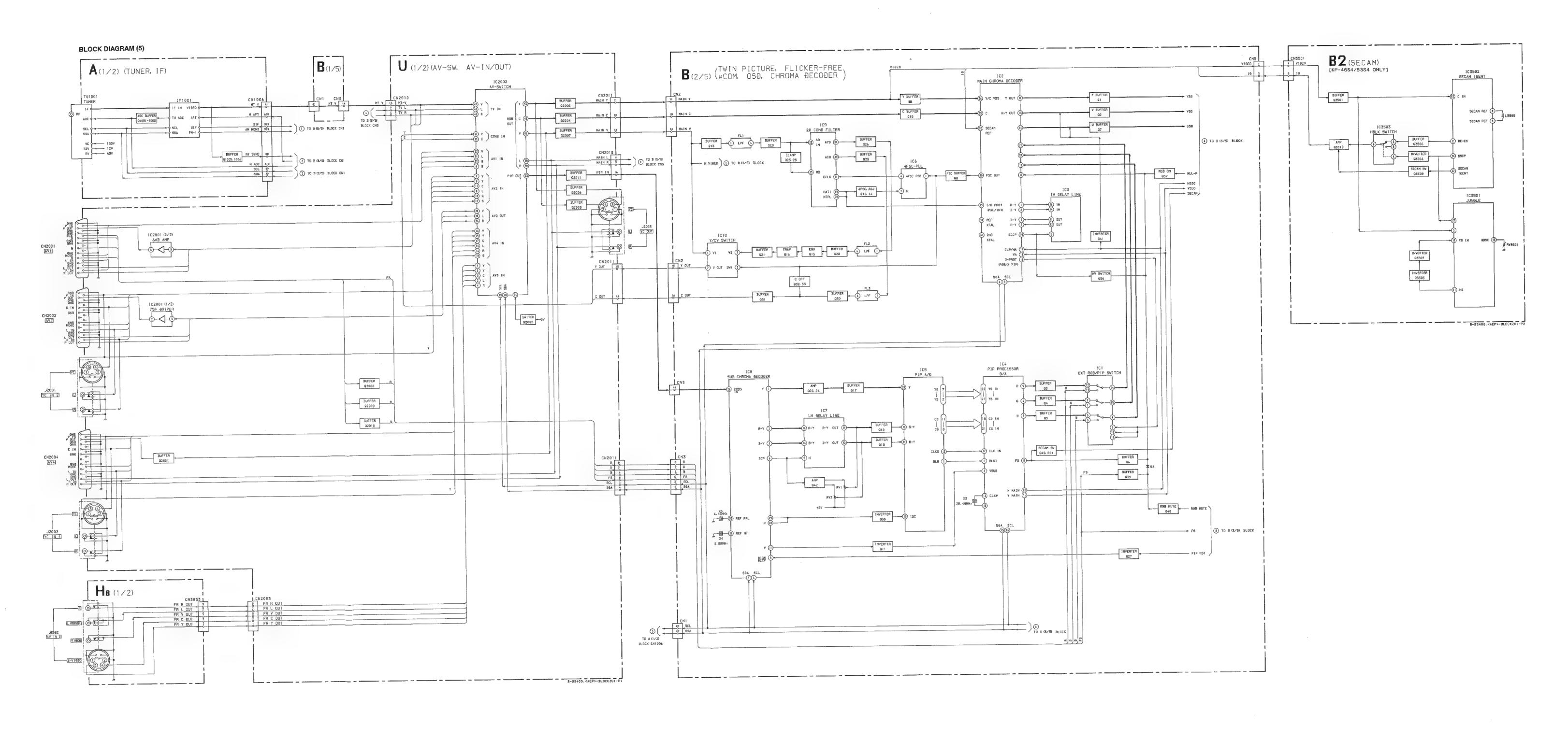
BLOCK DIAGRAM (3)

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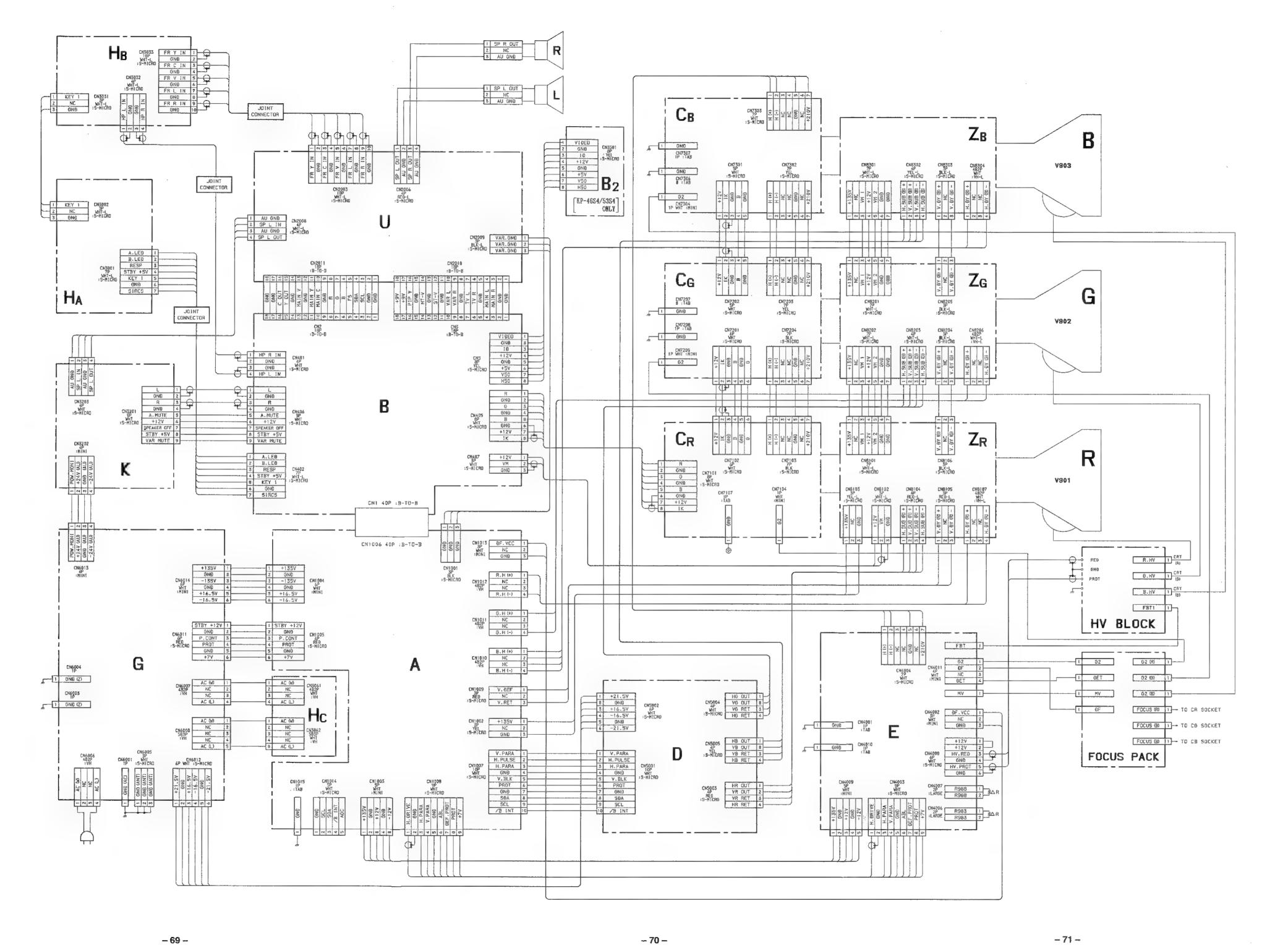
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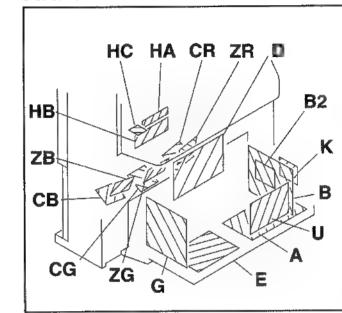
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6-3. CIRCUIT BOARDS LOCATION



RESISTOR : RN METAL FILM : RC SOLID

CAPACITOR : TA TANTALUM

: FPRD NONFLAMMABLE CARBON

: FUSE NONFLAMMABLE FUSIBLE : RW | NONFLAMMABLE WIREWOUND : RS NONFLAMMABLE METAL OXIDE : RB NONFLAMMABLE CEMENT

: X ADJUSTMENT RESISTOR

: LF-8L MICRO INDUCTOR

: PP POLYPROPYLENE

: MPS METALIZED POLYESTER

: ALT HIGH TEMPERATURE

Note: The components identified by shading and mark A are critical for safety. Replace only with

Note: The symbol - display is on the component side.

The components identified by shading and mark A

are critical for safety. Replace only with part number

The symbol indicate fast operating fuse.

Replace only with fuse of same rating as maked.

Terminal name of semiconductors in silk screen

Common Anode Cathode

Common Anode Cathode

Common Anode Anode

Contimon
Cathode Cathode

: MPP - METALIZED POLYPROPYLENE

:PS STYROL

; PT MYLAR

: ALB BIPOLAR

part number specified.

printed circuit (*)

Discrete semiconductot

(Chip semiconductors that are not actually used are included.)

Device Printed symbol Terminal name

: ALR HIGH RIPPLE

6-4. PRINTED WIRING BOARDS AND

- All capacitors are in µF unless otherwise noted.
- Indication of resistance, which dose not have one for rating electrical power, is
- as follows. Pitch : 5mm
- ¼4W in resistance, ¼0W and ¼8W in chip resistance.
- All variable and adjustable resistors have characteristic curve B, unless otherwise
- The components identified by H in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding
- X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by
 make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by 📔 and repeat the adjustment until the specified value is achieved.

Part replaced (🕍)	Adjustment (🔝
C4057, D4026, R988, R4019, T4002, T4003 (FBT), E BOARD, HV BLOCK	HOLD-DOWN (R988)
C4033, C4034, C4046, C4047,C4049, D4012, D4018, D4023, D4028, D4035,R983, R4022, R4046, R4047, R4048, R4053, R4054, R4057, R4059, R4060, R4061, R4077, R4079, R4086, R4087, R4088, R4091, R4092, R4097, R4098, R4100, Q4013, T4002, T4003 (FBT), E Board, HV Block	HOLD-DOWN (R983)

- When replacing the part in below table, be sure to perform: Readings are taken with a color-bar signal input.
- (): NTSC 3.58
- Readings are taken with a 10MΩ digital multimeter.
- Voltages are do with respect to ground unless otherwise noted.
- * : Measurement impossibility.
- B+line.
 B-line.
 (Actual measured value may be different).
- 🗀 : signal path.

SCHEMATIC DIAGRAMS

- Capacitors without voltage indication are all 50V
- All resistors are in ohms.
- $k\Omega$ =1000Ω, $M\Omega$ =1000 $k\Omega$

- Rating electrical power: 1/4W
- - : nonflammable resistor.
- tusible resistor.
- A : internal component.
- : earth-chassis.

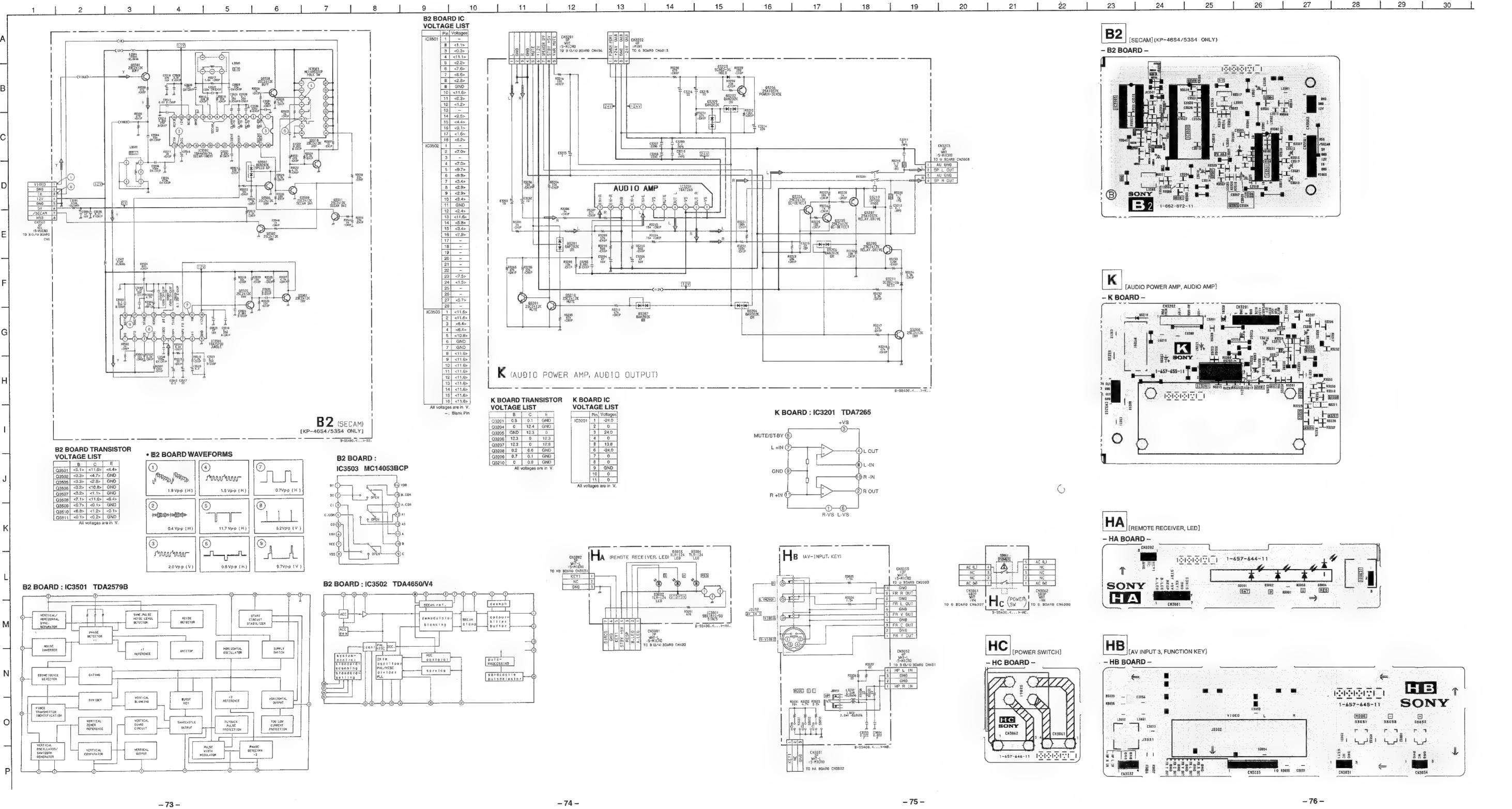
Part replaced (🕍)	Adjustment (🔝
C4057, D4026, R988, R4019, T4002, T4003 (FBT), E BOARD, HV BLOCK	HOLD-DOWN (R988)
C4033, C4034, C4046, C4047,C4049, D4012, D4018, D4023, D4028, D4035,R983, R4022, R4046, R4047, R4048, R4053, R4054, R4057, R4059, R4060, R4061, R4077, R4079, R4086, R4087, R4088, R4091, R4092, R4097, R4098, R4100, Q4013,	HOLD-DOWN (R983)

no mark : PAL ():SECAM

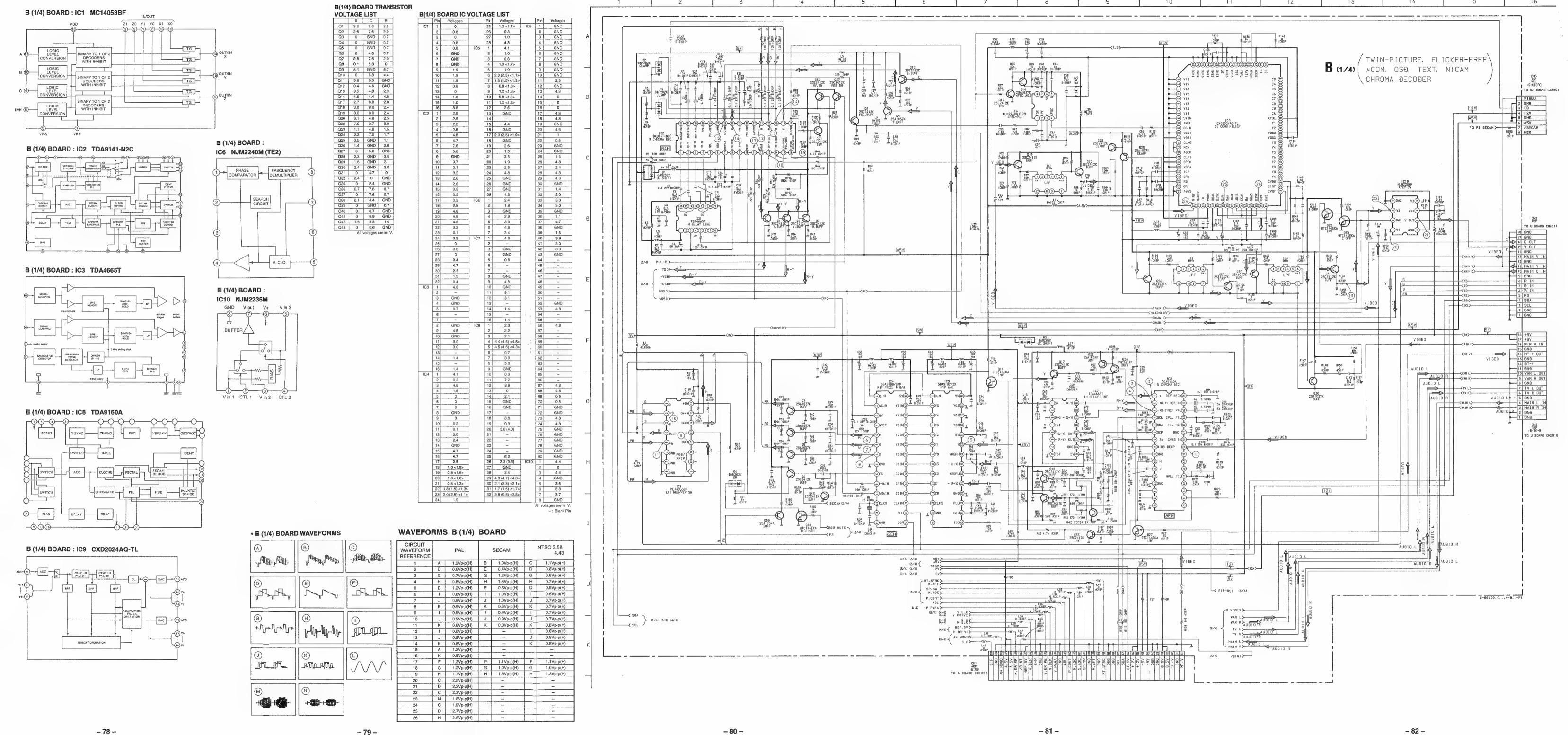
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.

- · Circled numbers are waveform references.

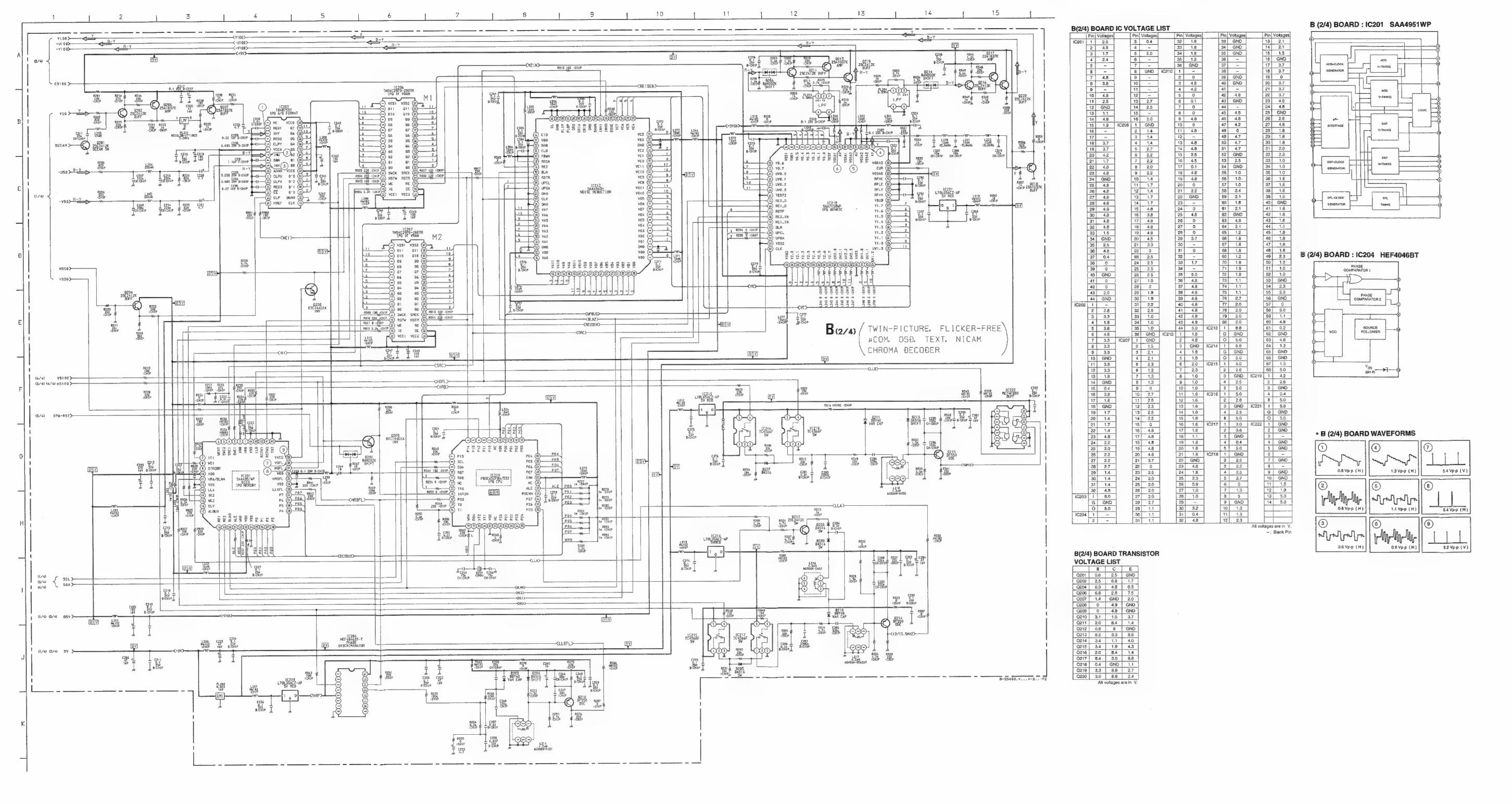
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Schematic diagrams ← B2 K HA HB HC board B (1/4) board ■ - 77 -



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Schematic diagrams

(B (2/4) board

(B (3/4) board

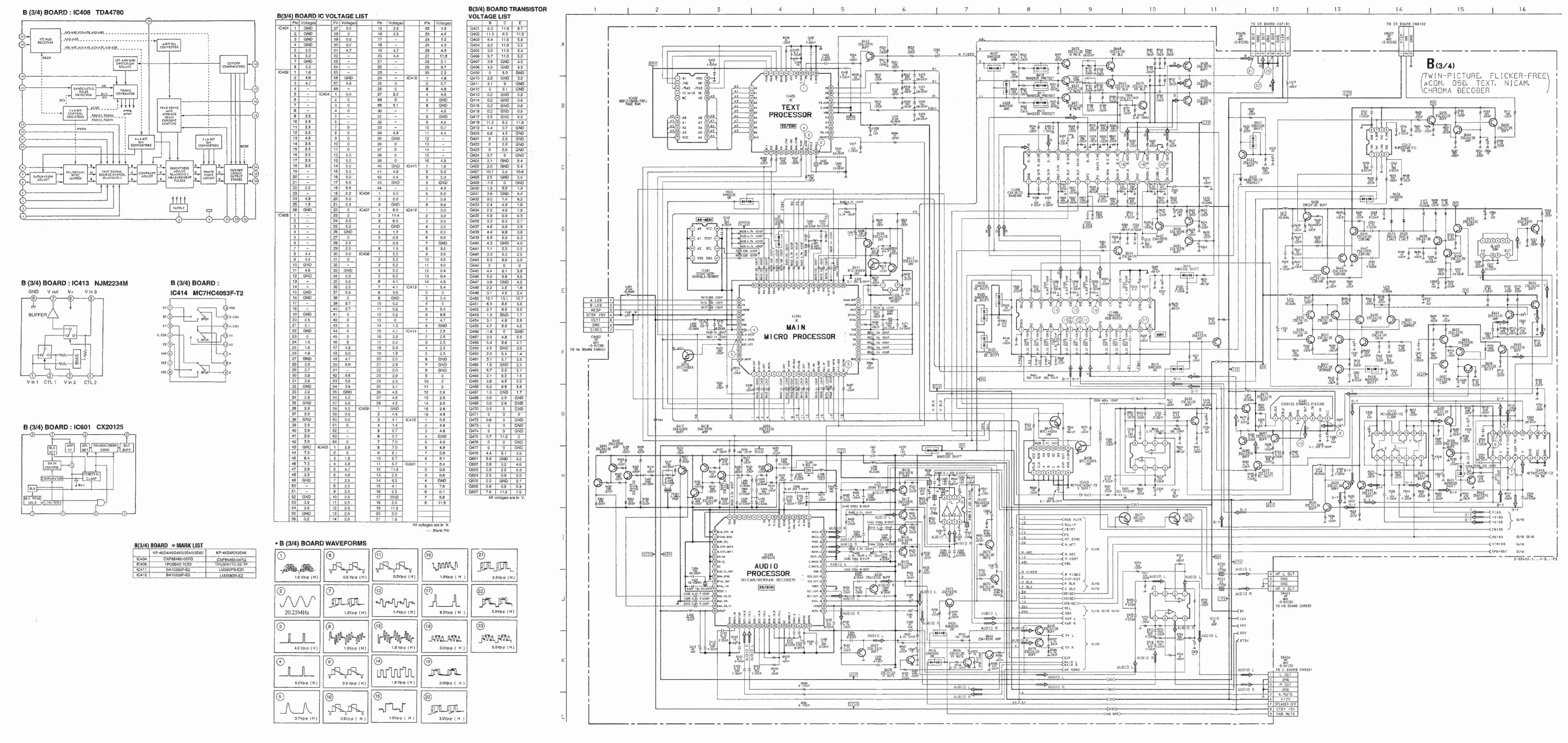
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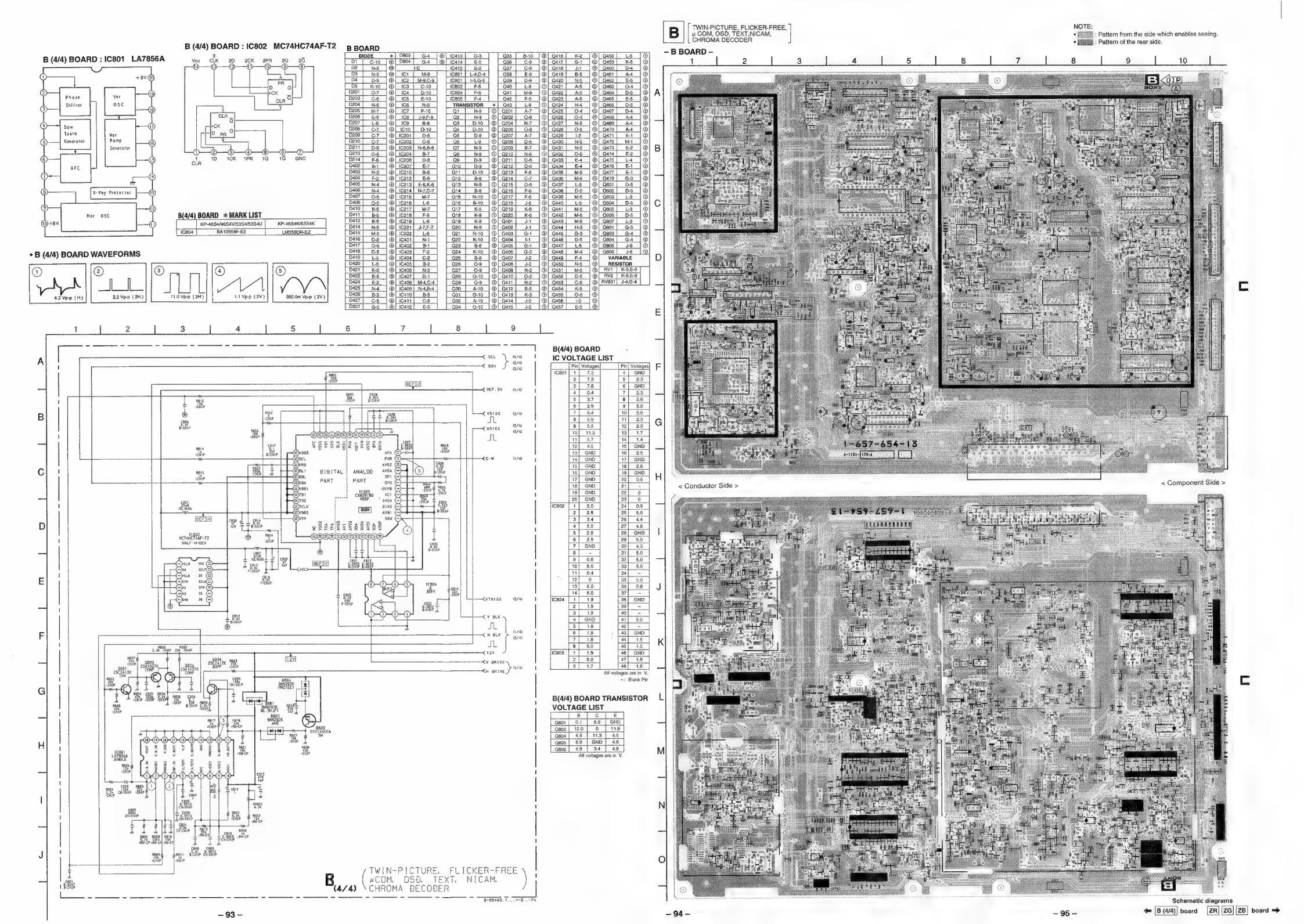


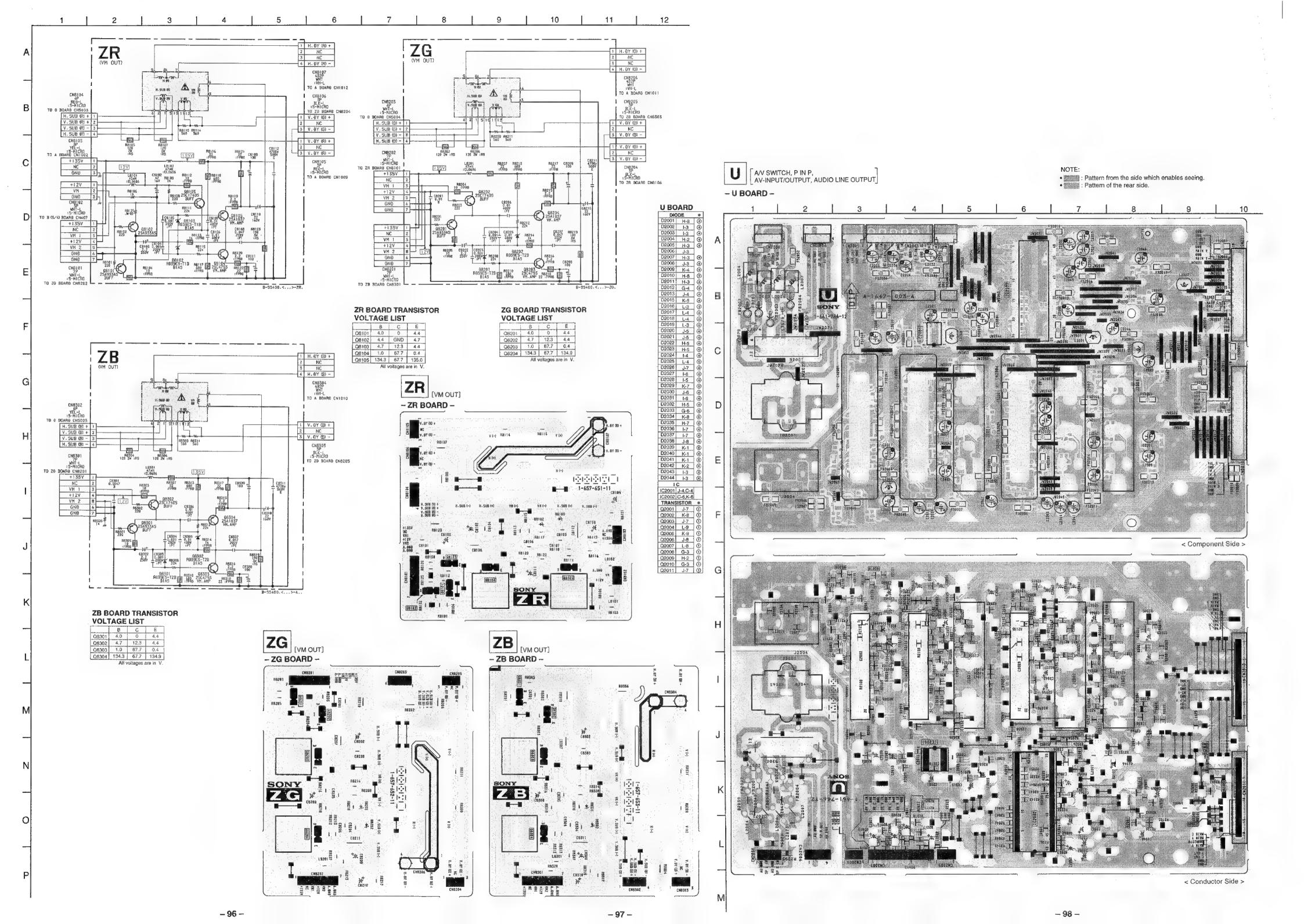
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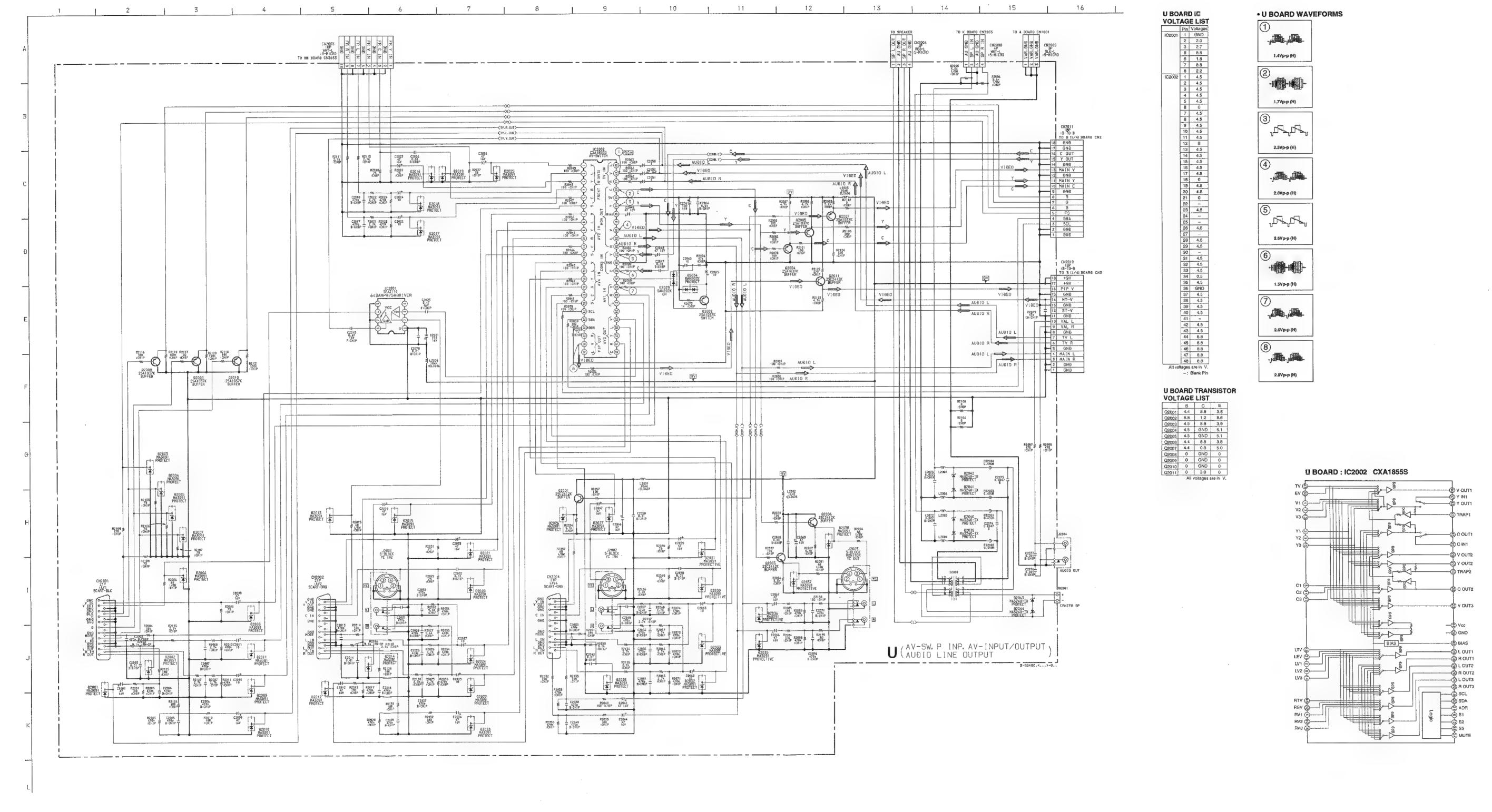
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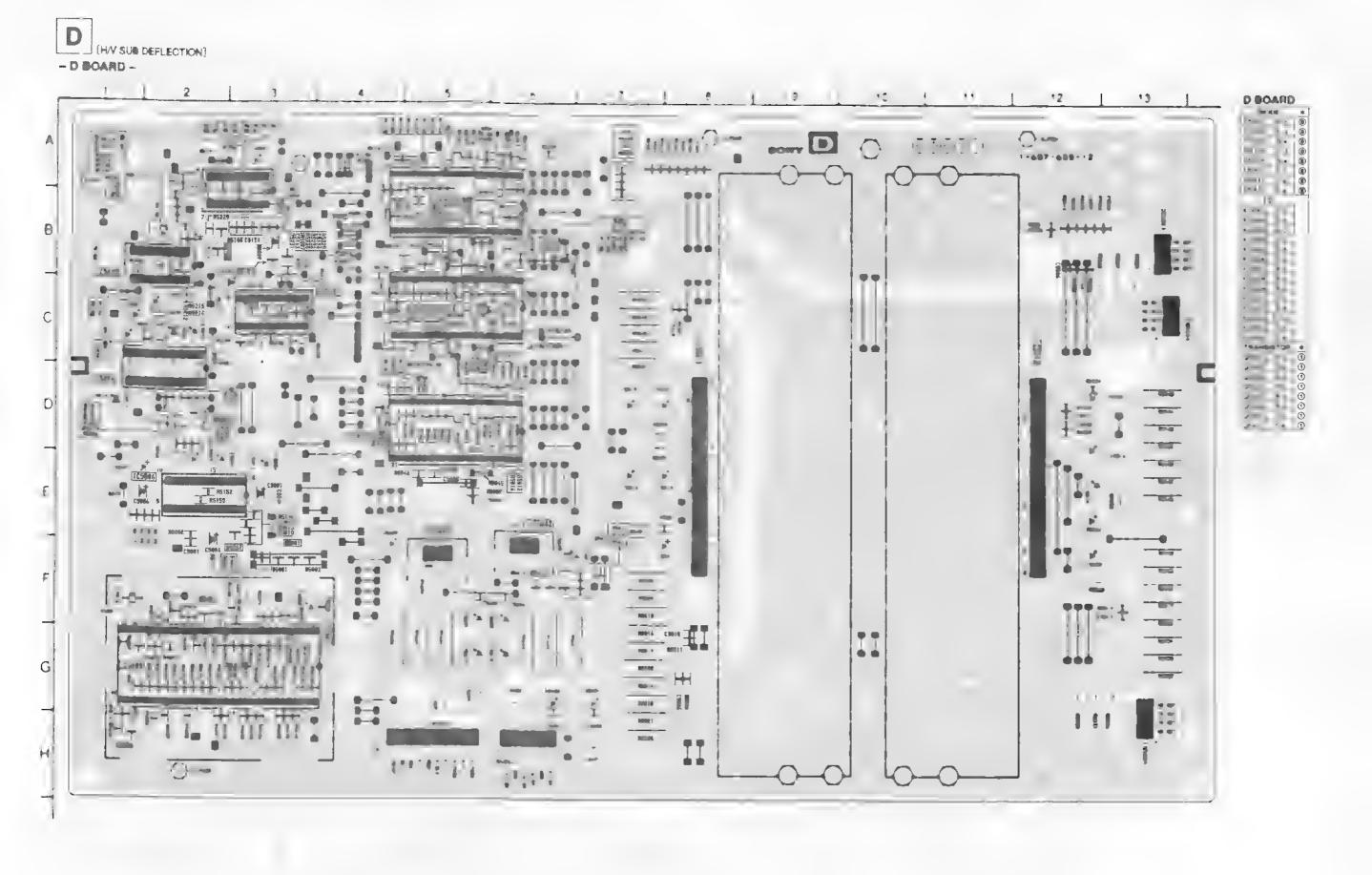
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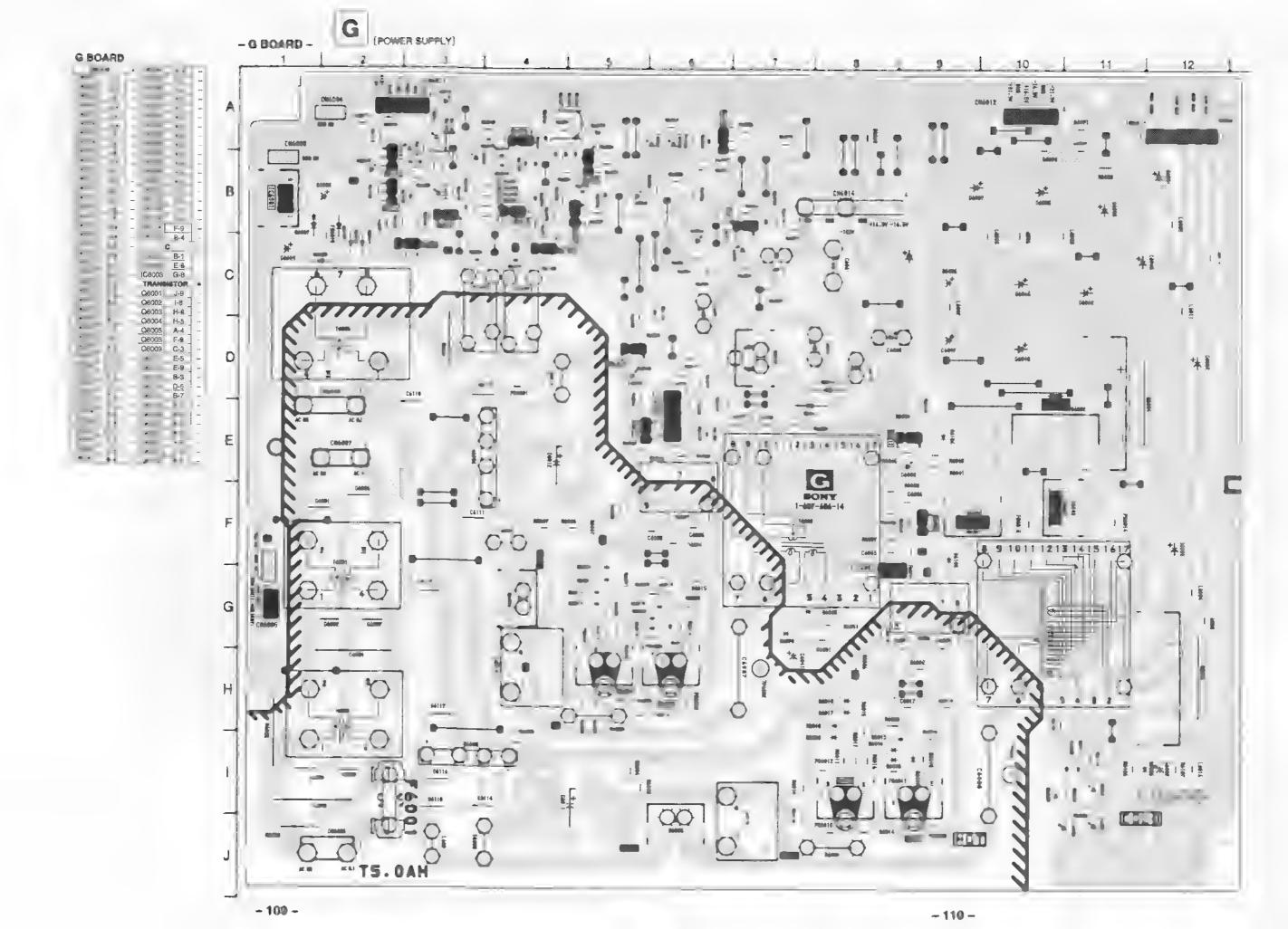
-- 102 --

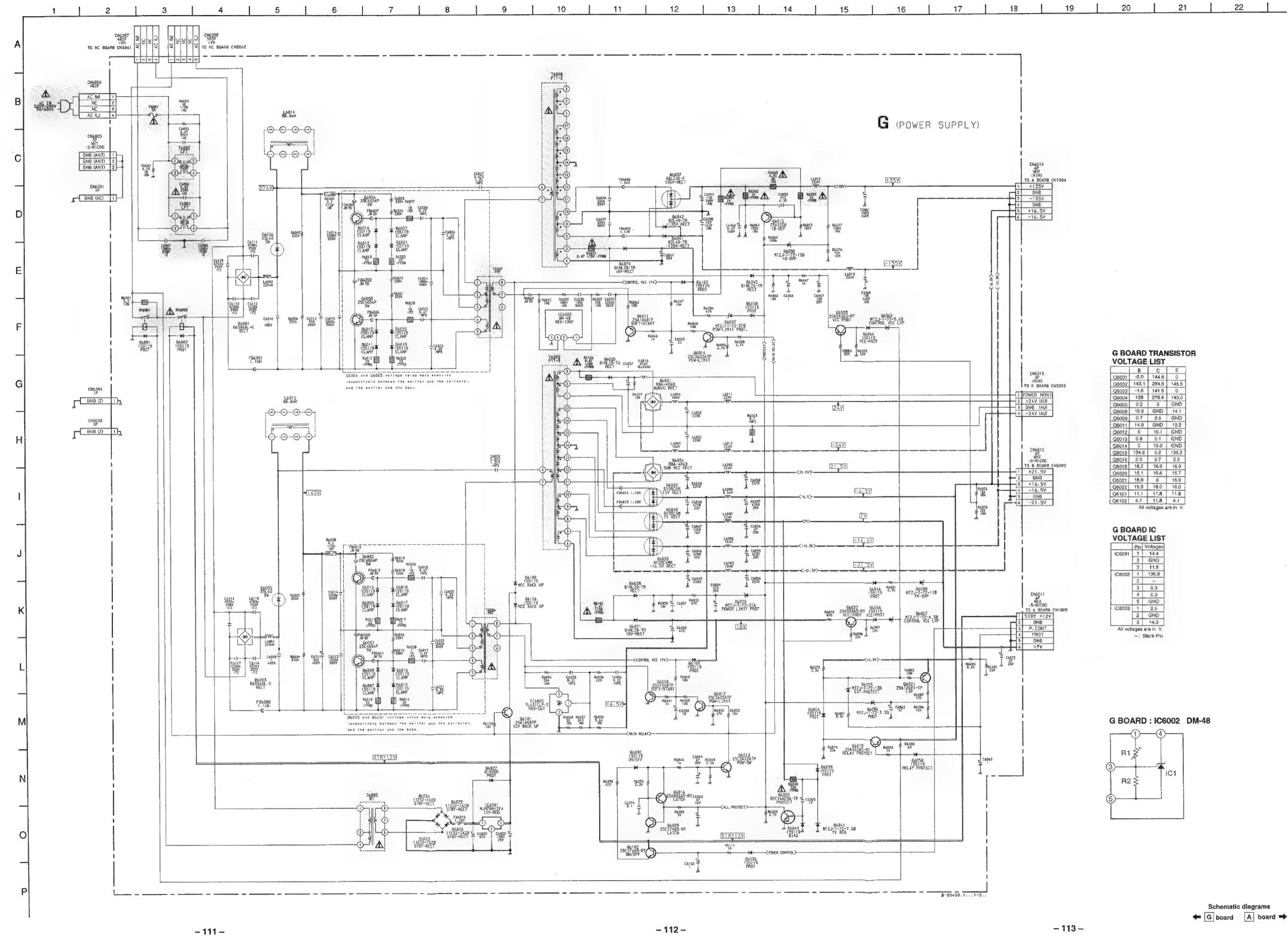
BOARD TRANSISTORE D BOARD IC VOLTAGE LIST **VOLTAGE LIST** 100 34 RS 1,5601 47#H + ;UH,08 757 L5602 474H 71 :LH.08 TO 28 BOAR9 CN6302 R5534 R5540 R5544 R5548 1/20 1/20 1/20 1/20 180 180 180 180 RSS14 IR : RN-CP P RS003 R5115 R5123 R5133 R5140 \$100 \$100 \$100 \$100 \$100 05001 DAN202K PROT.5W RSSSI 0 CHIP TO ZO BOARD CN8203 R9503 C5504 R9505 C5507 C5509 R9512 R9517 R9520 R9524 R9528 R9532 R9547 R9546 R9550 R9540 R9547 R9540 CSDO1 0.01 B:CHIP -21.5V -5¥ 05001 05002 9TC144EKA 0AN202X PROT.SW PROT 21.50 TO A BOARD CHIDO7 C5002 0.0039 B:CHIP 85001 2.2k :CHIP R5527 -21.5V 1 TO ZR BOARD CN8104 R5506 Ik #RN-EP 95401 9AN202K PROT-SW -21.5V -21.5V Pin numbers which are not described are not used. ■ BOARD : IC5004, 5006 PA0053B R5407 ≱ :CHIP -16.5V MULTI 05411 0AN202K PROT.SW MS277 ± A5230 € 1581P ... TRIP S401 0.01 220 F:CHIP R5411 220 CHIP MULTI PLEXER MULTI MULT) PLEXER R5224 4 R5229 8.2k 7 15k 1CHIP 2 CHIP ## ## :CHIP ## :CHIP

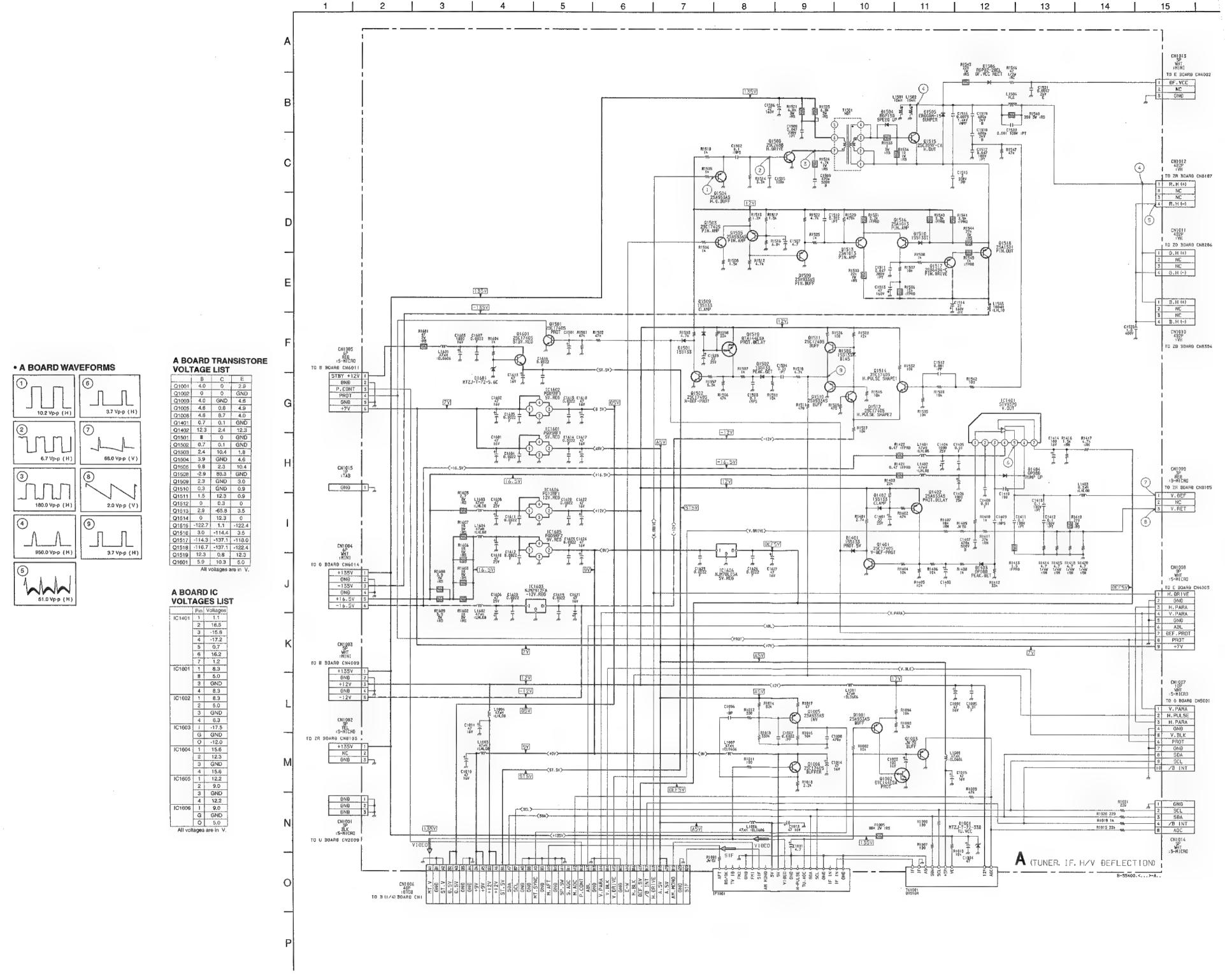
C5106 R5222 C5110 TDA
1.CHIP :CHIP QS411 0TC144EKA PROT.5W BLK IN SAWC ≸ R5196 100 1001P • D BOARD WAVEFORMS R5198 101 :RN-CP \sim 5.0 Vp-p (V) 0.9 Vp-p (H) 2.6 Vp-p (V) 2.5 Vp-p (H) RS228 RS235 RS058 1CHIP 1CHIP 1CHIP 1.6Vp-p (V) 2.6Vp-p (V) 2.0 Vp-p (V) 11 10 11 R5076 220 ;CHIP 2.6 Vp-p (H) 1.0 Vρ-p (H) 2.6 Vp-p (V) #5406 100 :CHIP 2.6 Vp-p (H) 2.6 Vp-p (V) RS013 RS014 RS054 | 1CS001 CAMP :CAMP :CAMP CXP851128-613S REG1#-COM 2.4 Vp-p (V) CSO16 XSD01 D (H/V SUB DEFLECTION) 2.9 Vp-p (H) 1.4 Vp-p (V)

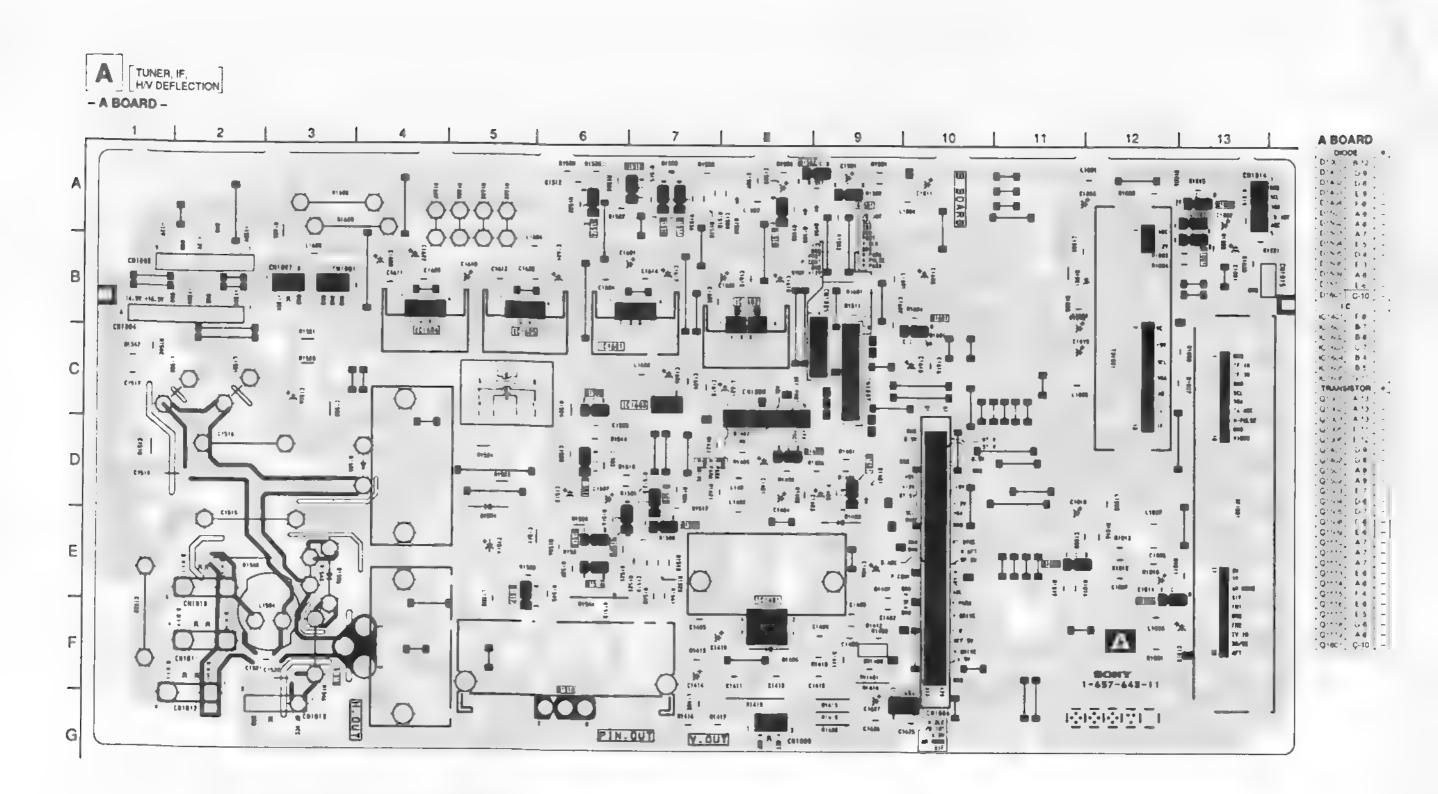
÷ 103 -



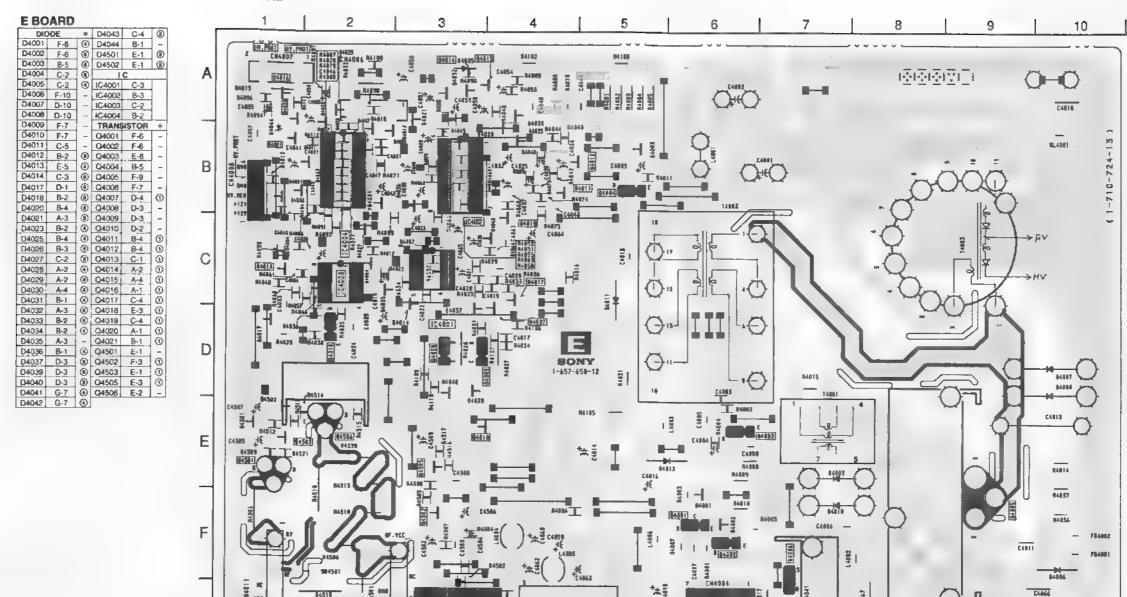












CH4009

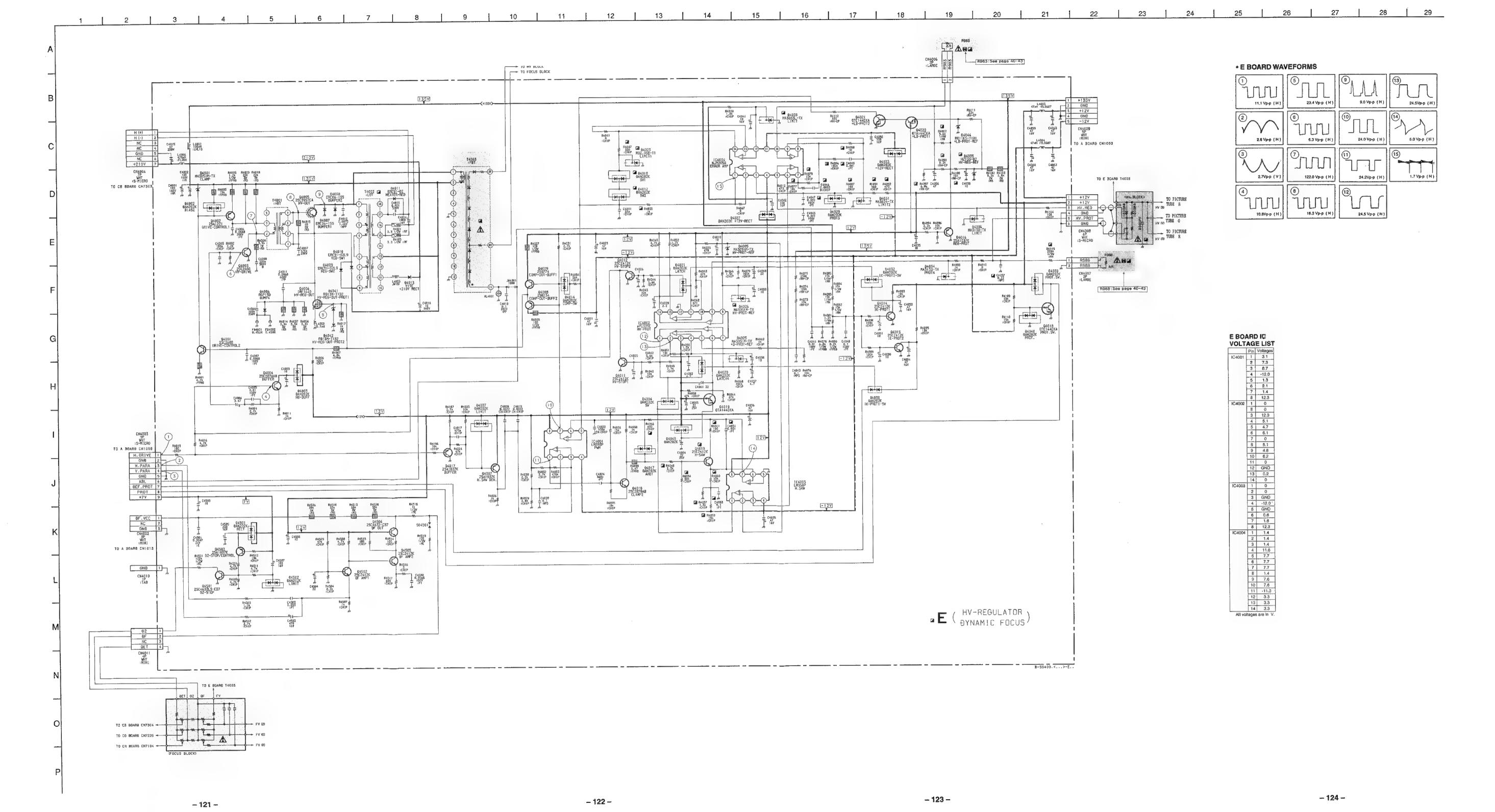
A LO 4 8 4 2 1 Mail 3 4 1 Mail 3

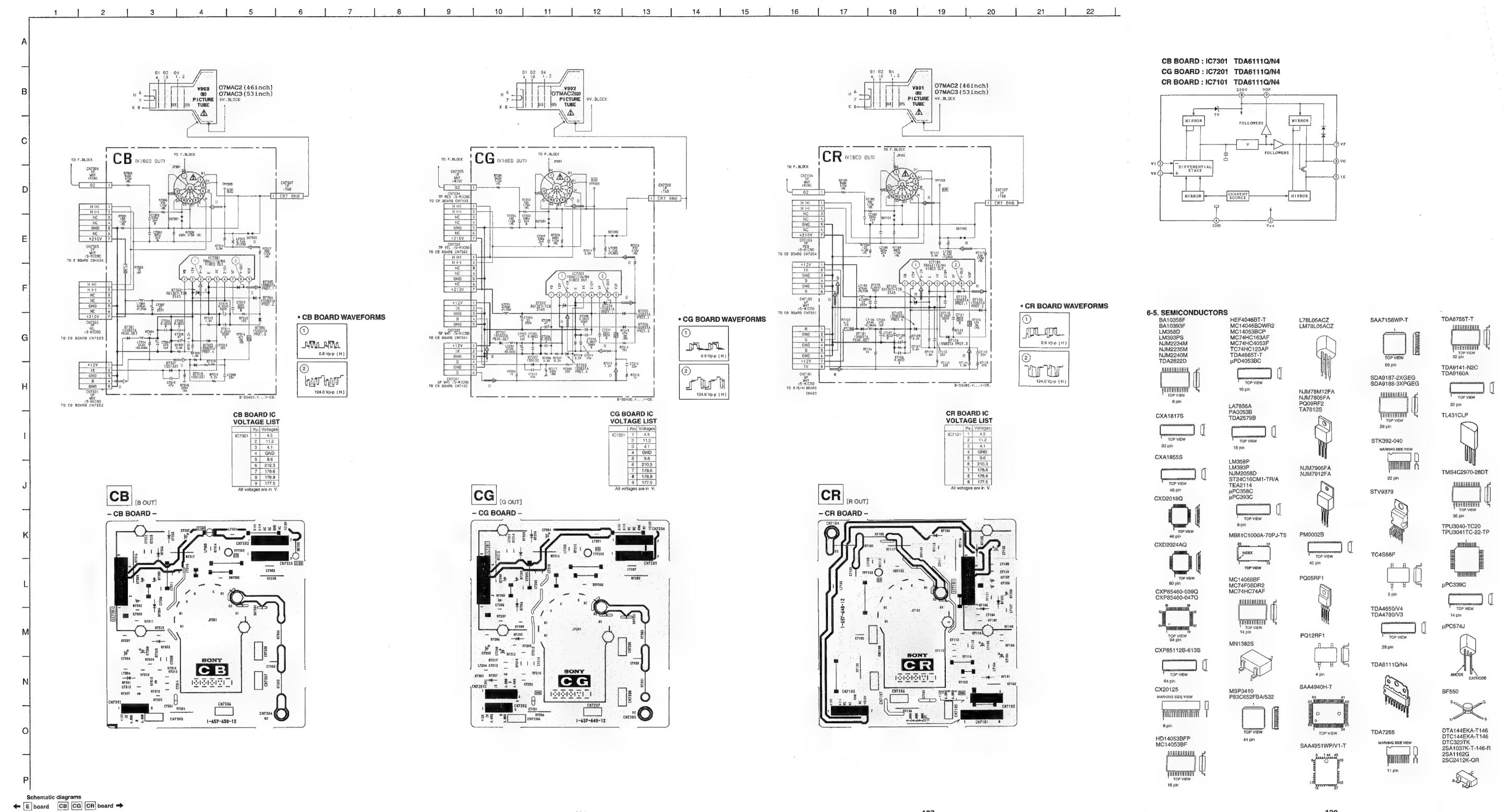


NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

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-- 126 --

- 127 -

– 125 –

6-5. SEMICONDUCTORS

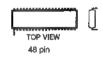
BA10358F BA10393F LM358D LM393PS NJM2234M NJM2235M NJM2240M



CXA1817S



CXA1855S



CXD2018Q



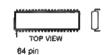
CXD2024AQ



CXP85460-039Q CXP85460-047Q



CXP85112B-613S



CX20125

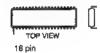
MARKING SIDE VIEW



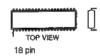
HD14053BFP MC14053BF



HEF4046BT-T MC14046BDWR2 MC14053BCP MC74HC163AF MC74HC4053F TC74HC123AP TDA4665T-T uPD4053BC



LA7856A PA0053B TDA2579B



LM358P LM393P NJM2058D ST24C16CM1-TR/A ΤΕΑ2114 μPC358C μPC393C



MB81C1000A-70PJ-T5



MC14066BF MC74F08DR2 MC74HC74AF



MN1382S



MSP3410 P83C652FBA/532



L78L05ACZ LM78L05ACZ



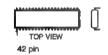
NJM78M12FA NJM7805FA PQ09RF2 TA7812S



NJM7905FA NJM7912FA



PM0002B



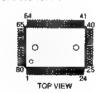
PQ05RF1



PQ12RF1



SAA4940H-T



SAA4951WP/V1-T



SAA7158WP-T



SDA9187-2XGEG SDA9188-3XPGEG



STK392-040



STV9379



TC4S66F



TDA4650/V4 TDA4780/V3



TDA6111Q/N4



TDA7265



11 pin

TDA8755T-T



TDA9141-N2C TDA9160A



TL431CLP



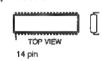
TMS4C2970-28DT



TPU3040-TC20 TPU3041TC-22-TP



µРС339С



μPC574J



BF550



DTA144EKA-T146 DTC144EKA-T146 DTC323TK 2SA1037K-T-146-R 2SA1162G 2SC2412K-QR



DTA144ESA DTC144ESA-TP 2SC1740S-R 2SC3622A-LK



IRFI640 2SA1837 2SC4793



2\$A1013-O 2\$A1208 2\$A1208\$-TP



2SA1048-YGR 2SA1175-HFE 2SC2785-HFE



2\$A1221-L 2\$A1221-T-M 2\$B733-34 2\$B734-T-4 2\$D774-34



2SA1301-O



2SA933AS-QRT 2SC2878-AB



2\$B649A 2\$C2688-LK



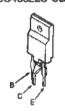
2SC1740S-R



2SC3997CA



2SC4632LS-CB7



2SC4834P



BAS16 BBY40



DAN202K



DAP202K



D1NL20 EGP20G GP08 GP08DPKG23 HZT33-02 MTZ-T-72-22A MTZ-T-72-33D RD2.0SB-T1 RGP02-20EL-6394 RGP15GPKG23 1SS83



D1N20R MTZJ-11B MTZJ-4.3B MTZJ-5.6B MTZJ-5.6C MTZJ-T-72-13B MTZJ-T-72-27B MTZJ-T-72-3.3B MTZJ-T-72-5.6B MTZJ-T-72-7.5B RD11ES-B1 RD13ES-B2 RD22E\$-B1 RD27ES-B2 RD33ES-B2 RD39ES-B2 RD4.3ES-B2 RD5.6ES-B2 1\$\$119-25TG 188133 11ES2



D10SC4MR



D10SC4M D8LC40



D6SB60L-K RBA-406B



D2L40F D2L40-TA



D5L60



ERC06-15S ERC91-02 \$2LA20F



ERC38-06 V19E



ERD08M-15



MA3024-TX MA3033-L MA3047-TX MA3051M MA3075M-TX MA3091 MA3130 RD13M-B2 RD4.7M-B2 RD5.1M-B2 RD5.6M-B2 RD7.5M-B2 RD7.5M-B2



MA3091M-TX



MA3240-TX

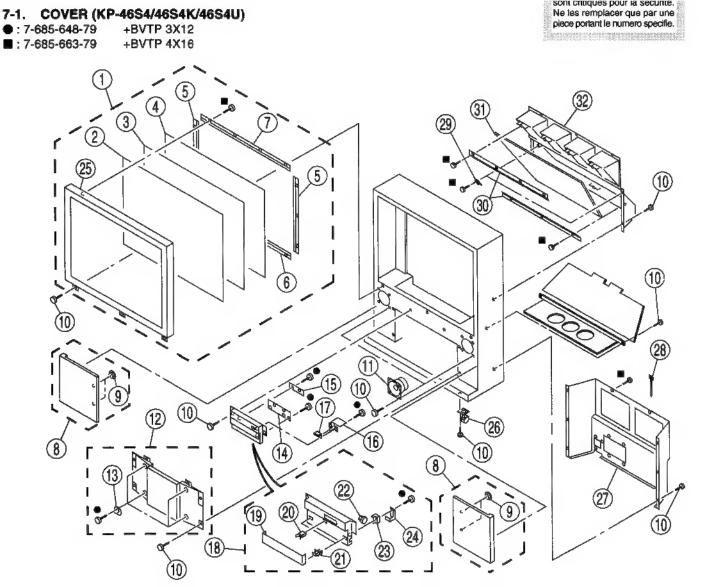


SC802-06



TLR124





7-2. COVER (KP-53S4/53S4K/53S4U) : 7-685-648-79 +BVTP 3X12 : 7-685-663-79 +BVTP 4X16 +KTP 3X12 ▼: 7-685-248-14 (81 57 <u>55</u> (51) (80 <u>52</u> [59] 54 52 (73)(58) (76) 64 (52) 61 67 66 (58) 60

7-3. **CHASSIS**

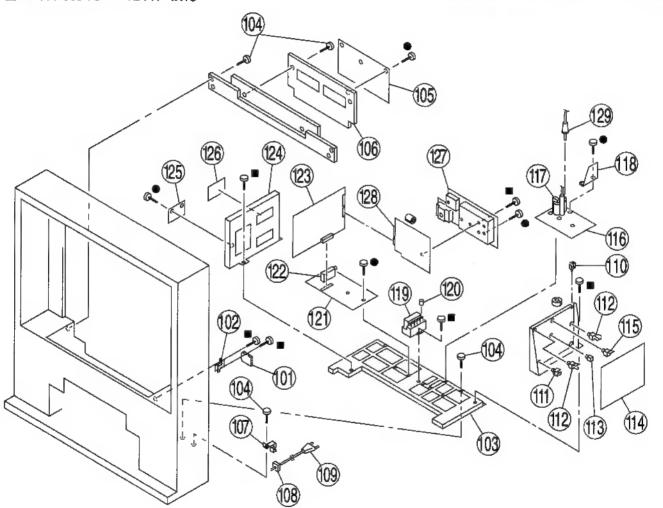
7-685-648-79 +BVTP 3X12

1: 7-685-663-79 **+BVTP 4X16** AANAH EN TOOL BANKAN TERBER BERTARA The componants identified by shading and mark i are critical for safety.

Replace only with part number specified. Asias appliantageners comm

Les composants identifies par une trame et une marque ! sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie. Parter-Fireburgeranio and

encorder a condestrations



7-4. PICTURE TUBE

♦ : 7-685-663-71 +BVTP 4X16

The componants identified by shading and mark \triangle are critical for safety.

Replace only with part number specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

